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IN THE MUNICIPAL INDEX AND ATLAS (the annual reference volume of data and condensed catalogs published by the American City Magazine Corporation) readers will find statistical material, and articles on a wide variety of municipal and public works subjects, not published in the monthly issues of the magazine.

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measure them all ACCURATELY

WITH PITTSBURGH IMO METERS

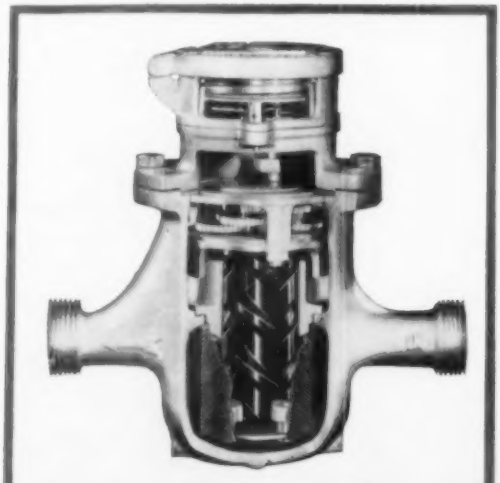
IF a thing is worth doing, it's worth doing well. Accordingly, since it's worth while to install meters on your consumers' lines, it should certainly be worth while to install only the best meters —those that will measure accurately over the entire range from the extreme low flows to the full volumes. That's exactly what the Pittsburgh IMO Meter will do, although extreme accuracy is only one of its advantages.

There is no other meter like the IMO. No other meter can even approach its performance, its silent operation, its durability, its accuracy on low flows or match its straight line accuracy curve.

This unequalled performance results from the fact that the Pittsburgh IMO is the closest approach to a true positive displacement meter now made to measure water. *It is not a current or inferential type meter.* Its success is based upon the unique measuring chamber encasing three meshing and rotating hard rubber screws. This construction also permits noiseless operation without pulsation in flow.

It has been determined that the Pittsburgh IMO will pay for itself in a comparatively short time through measuring the trickles of water which the conventional meter will not record.

Write for bulletin W-529 which clearly shows the interior construction of the Pittsburgh IMO Meter in three dimensional illustration.



Preventing Decay of Sound Home Areas

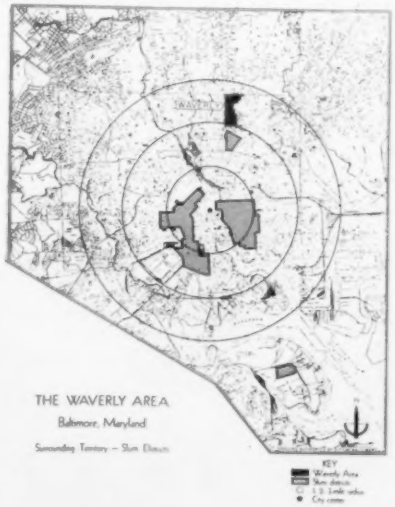
Proposals Based on a Two-Year Test Program

TO AROUSE communities to the fact that the loss of millions of dollars in property values and tax revenue has been needless in the past, and to impress on individual citizens the possibility of avoiding future sacrifice of their property investments, are the purposes of a book entitled "Waverly —A Study in Neighborhood Conservation," just published by the Federal Home Loan Bank Board, Washington, D. C. It describes a test program conducted over the past two years in the old-time village of Waverly, now an incorporated section of the city of Baltimore, Md., and comes to the conclusion that the decay of sound residential districts can be effectively prevented by "united community enterprise."

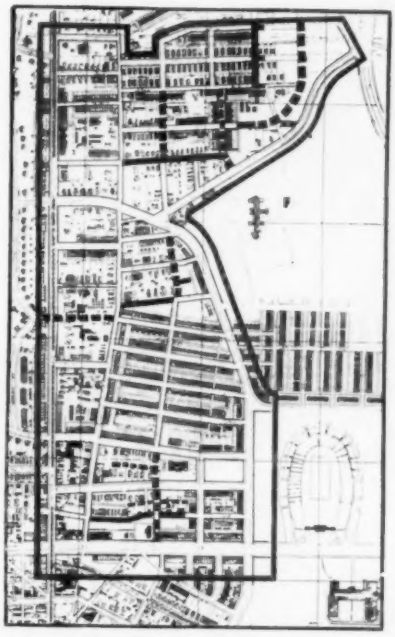
The treatment recommended, as a result of a two-year test program fully outlined in the book, is narrowed down to two major phases:

1. The physical restoration—by means of minor repair and major reconditioning, remodeling, modernizing, embellishment and landscaping—of all depreciated housing within a selected area.
2. Adjustment of zoning regulations and street patterns; opening, closing and widening of streets, with traffic and parking reforms; improvement of utilities; increase in park and playground space; the gradual elimination of non-conforming structures; and technical re-planning to guide both the rehabilitation of existing structures and all new construction.

The first phase offers a basis for immediate action; the second a program extending over the entire life of the community. But both are necessary, the book points out, to halt a process that has been accepted almost as inevitable despite its terrific toll in lost values and waste and resulting tax burdens that affect all residents of urban communities.



Map of Baltimore, showing (in black) the Waverly area; and (in gray) the slum districts of the city. The circles show distances of 1, 2 and 3 miles from the city center.



The R-shaped heavy border outlines the boundary of the Waverly area. Solid black lines within this area show recommended street openings; and the heavy broken lines indicate recommended street paving. Some proposed street conversions and closings are also shown on another map not here reproduced.

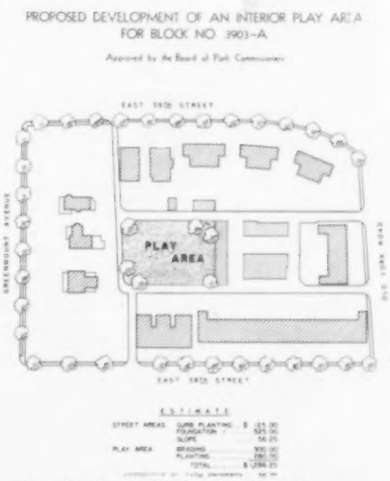
Nation-Wide Cooperation Offered

As a result of the Waverly study, essentially a laboratory experiment, the Bank Board's blight-control unit will be continued in an effort to serve and cooperate with all agencies of government and community housing groups.

In addition to helping "dry up" the source of future slums, safeguard billions of dollars of private and public investment, make unnecessary enormous future municipal expenditures for the construction of duplicate schools, utilities and streets, and preserve considerable proportions of the declining urban tax base, it will attempt to serve still another purpose—to increase the effectiveness of the present National Defense housing program through the rehabilitation of decrepit residential neighborhoods. Specifically, it will:

1. Provide a clearing house for conservation experience.
2. Awaken interest in the implications of urban blight.
3. Develop, install and supervise technique for conservation survey and planning.
4. Supply information concerning financing forms and sources.
5. Aid in preparing and promoting conservation legislation.

"It is a fact—now slowly being recognized by housing economists—that just as the application of curative remedies will preserve the vigor and delay the eventual death of the human body, so can definite preventive measures be taken, in the case of the urban community, measurably to extend its period of usefulness and long postpone its final disintegration," the Waverly book declares. "These remedies will not serve to rejuvenate or perpetuate a district whose physical structures and equipment are in so advanced a state of deterioration as to be unfit for normal use. Usually, the only cure for an area of that type is complete demolition and subsequent replanning. The proposed preventive treatment is designed, rather, for those older neighborhoods which have not yet approached slum status but in which the sinister effects of age and obsolescence are beginning to gain so disruptive a momentum that —unless their present chart line is definitely improved—they will eventually be carried below the limit of normal usefulness and beyond rescue by either individual or collective effort."

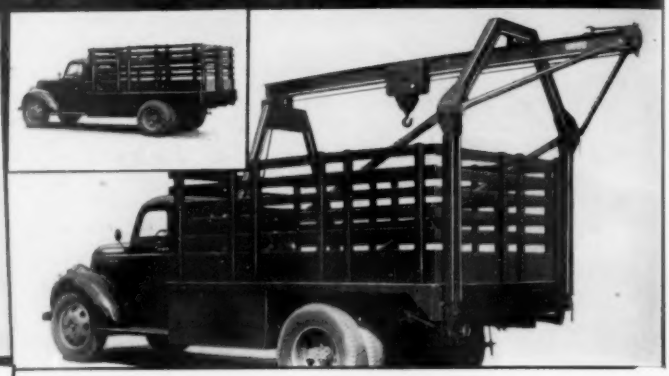


Waverly is markedly deficient in recreational space, particularly for younger children. Vacant block or part-block areas, suitable for formal city playgrounds, are nowhere available within the district. In developing recreational facilities for Waverly, an "interior play area" scheme was therefore adopted.

THE GAR WOOD "Q-D" QUICK DETACHABLE

TREE-MOVING CRANE UNIT PROVIDES "Two Trucks in One"

MOUNTED—ready for use



MOUNTED or DEMOUNTED in 10 minutes

RACK SIDES CAN BE CARRIED WITH OR WITHOUT TREE-MOVING CRANE UNIT IN PLACE (*see inset*)

Power of winch used for erecting or removing crane

Truck platform cleared for other work

Easily done by two men

● **Users are enthusiastic about the new Gar Wood "Q-D" (quick-detachable) Tree-Moving Crane Unit which can be erected or removed in ten minutes. This all-purpose, body-and-crane combination is designed for the 1½-ton truck of approximately 157″ wheelbase. With crane in place, tree balls up to six feet in diameter and three tons in weight are quickly picked up, transported and reset. When the tree crane is removed, platform is left clear with winch in place for other work. When the crane is off (and with racks on) operators find it desirable to place a partition behind the winch to provide a boxed space on the platform to carry shrubs and loam or other loose materials.**

The Tree-Moving Crane Unit has many other uses. Monument manufacturers, scale testers and machinery movers say it is a time and money saver.

The "Q-D" Tree-Moving Crane was invented by tree experts. Gar Wood Industries, Inc., obtained the exclusive right to manufacture and sell this modern, patented, tree-moving crane unit, from the co-inventors Paul H. and James A. Davey, both associated with the well-known Davey Tree Expert Company, Kent, Ohio.

Write or ask for illustrated and descriptive literature.

PREPARING TO RESET	READY TO LOWER	SET IN PLACE

GAR WOOD INDUSTRIES, INC.

WINCH DIVISION • 7924 RIOPELLE STREET • DETROIT, MICHIGAN; U. S. A.

Our Municipal Notebook

But Where Are the New Vehicles?

MANY A PUBLIC CONTROVERSY if put in a frying-pan will reduce to bits of selfishness, distrust, ignorance and lethargy.

In a certain city a wrangle over transit has been going on for years. The company wants to go ahead with a modernization program. The city government wants the company to replace its old vehicles and furnish modern service. Those objectives would seem to be one and the same.

The roads to that objective, however, are quite different.

1. The company is prepared to cut its capital; but the city, with eventual municipal ownership in mind, wants an additional reduction.

2. The company wants less onerous regulation, meaning freedom in purchases, and freedom in deciding the details of vehicle size, make and appointments.

3. The company wants the city tax to be imposed *after* stock and bond obligations have been met.

It would seem that these differences are not insuperable. Certainly the first two could be ironed out. The third is more difficult, inasmuch as there are dividend arrears amounting to more than ten years' worth of the present annual tax collection. In addition there are of course innumerable controversial details.

The fact remains that this is a money squabble. If the city government agreed to regulate without administering, and to forego tax collection until dividends had been paid, the company would buy new vehicles and endeavor to make money again. If the company would slash its capital structure sufficiently, then the city would approve the modernization program.

Either way, you get new coaches, which the public wants; neither way, you don't, which is what the public gets.

What is the matter?

Frequently the ownership is the matter. When the operator was also the owner, the operation might be good or bad and the financing ruthless, but the operator's power and responsibility were unquestioned. He could act. In these days when the operator is likely to be only that, and the owners are laymen or banks knowing next to nothing about transit, the power is in the hands of the security holders, and the managers' responsibility is divided between protecting security values and furnishing good service, with resulting difficulties in reaching decisions favorable to the riding public.

Be it transit, a parking problem, or any other city problem, it is difficult for some men to waive personalities, penetrate to the essentials and apply the only practical solution. Yet those are the things which constitute public service.

Waves of German Bombers Blast at English City

THE WEATHER

OHIO STATE JOURNAL

GREEN

FINAL MARKETS SPORTS

'STRIP-PICKET' STRIPS

PARK METERS DUE SOON

Hodge Convicted in Wife Shooting

Planes Sink Nazi Tanker, British Say

HE'S GUILTY

Husband Gets Prison Term As She Waits

SHE GETS "BREAK"

Installation Will Start Next Week

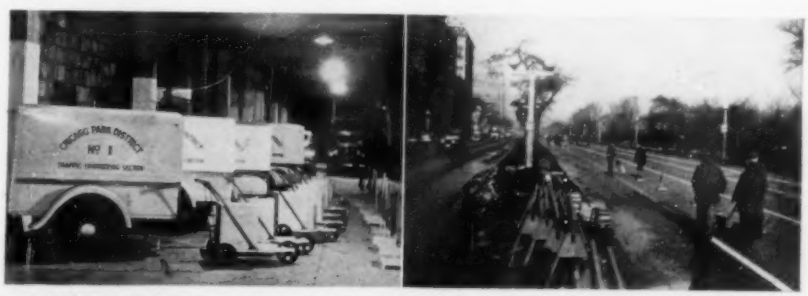
On the front page of the Ohio State Journal, German bombing, and wife shooting, take subordinate position to the vaster and closer event of a thousand parking meters for Columbus, Ohio

In the White

"THE PUBLIC IS APATHETIC," says a transit operator. Why not *make* the public see? Paint every local bus that goes to the business district a glistening white. White connotes pride in service and in city. It means: Come along, get in, this is the way to go comfortably to and from the business district. That is what transit companies and traffic authorities want people to do. To get them to do it, it is necessary to attract attention agreeably to what turns out to be an agreeable ride. Go the great white way, the snowy trail, follow the white line. Nobody would prefer to ride in a big black vehicle.

Miles of Paint

THE CHICAGO PARK DISTRICT paints 4,000,000 feet of traffic lines per year. On Michigan Avenue the lines are renewed every month; on Augusta Boulevard, the center line is painted three times a year. Traffic Engineer O. K. Jelinek, of the Chicago Park District, says that laning and marking are increasingly used not only to keep traffic in line, but to sift out traffic by direction, by types, by speeds. In this work, the District uses six service trailers carrying both one-line and two-line marking machines.



A light trailer hooked up to an automobile carries a traffic line marking machine to the job in the Chicago Park District

Modern ELEVATED STORAGE Improves Water Service . . .

THE advantages of modern elevated water storage tanks in providing gravity water pressure for general service . . . for meeting demands during peak load periods . . . or for providing adequate reserves for fire protection . . . are being demonstrated daily under a wide range of conditions throughout the country. Whether water is being utilized for municipal or industrial service, there are definite advantages to be gained through the use of elevated tanks. Kirkwood, Missouri, is one of the many towns that have capitalized on the benefits of elevated storage, through the installation of the Horton radial-cone bottom tank illustrated at the right. This unit has a capacity of 500,000 gallons.

Please address our nearest office for information or quotations on Horton elevated tanks to fit your individual requirements.

CHICAGO BRIDGE & IRON COMPANY

Chicago	2127 McCormick Bldg.	Philadelphia	1616-1700 Walnut St.	San Francisco	1033 Rialto Bldg.
New York	3308-165 Broadway Bldg.	Boston	1501 Consolidated Gas Bldg.	Houston	918 Richmond Avenue
Cleveland	2236 Rockefeller Bldg.	Birmingham	1502 N. Fiftieth Street	Tulsa	1625 Hunt Bldg.
Detroit	1501 Lafayette Bldg.	Dallas	1606 Praetorian Bldg.	Los Angeles	1403 Wm. Fox Bldg.

Plants at BIRMINGHAM, CHICAGO, and GREENVILLE, PA. *In Canada:* HORTON STEEL WORKS, LIMITED, FORT ERIE, ONT.

When you write for that catalog, kindly mention THE AMERICAN CITY.

Water-Department Problems

Meters Don't Favor the Water Utility

AN ANALYSIS OF METER-TESTING FIGURES compiled by the New Haven Water Co., New Haven, Conn., shows definitely that water users almost invariably get more water than they pay for. During the past year, 2,620 meters in service in various areas of the water-supply system were subjected to 5,240 exacting laboratory tests. Only 37 of these tests showed what is technically described as "fast" meters, while 2,740 were classified as "slow." A "slow" meter means that if 10 cubic feet of water were actually used, a somewhat lesser amount, such as 9.9 cubic feet, would be registered.

The average percentage of error in the "fast" tests was 0.83 per cent, and in the "slow" tests it was 0.71 per cent, as compared with 2.5 per cent average error permitted by the Connecticut State Utilities Commission.

The company's engineers carried out 5,910 field tests on 2,955 meters. In nearly 65 per cent of these tests, the meters were found to be absolutely correct. The average error in the "fast" tests was 0.94 per cent; in the "slow" tests it was 0.91 per cent.

A new method of testing has been inaugurated which makes possible a more rigorous examination of water meters. Heretofore, meters have been tested individually in the laboratory, while now they are examined in groups of ten. The resulting savings in time have made it feasible to widen the types of tests to include a greater variety of rates of water flow, making for more thorough study.

Hot water and freezing weather cause many meter breakdowns. Sixty-four meters were injured by hot water and 118 by freezing temperature in the past year. When owners forget to turn off their manually operated hot-water heaters, the water gets so hot that it is forced out through the cold-water pipes to the meter, where it often inflicts severe damage.

The number of meters harmed by hot water and cold weather is difficult to determine exactly. More than 500 meters classified as "stuck" were repaired by the company in the past one year. Many of these meters, it is believed, were injured by hot water and freezing.

The average cost of repairs per meter for the year was $1.93. Handling charges, including removal and replacement of the meter, averaged 90 cents. It is estimated by company officials that it costs 25 cents a year to read each meter, or approximately 5 cents a reading.

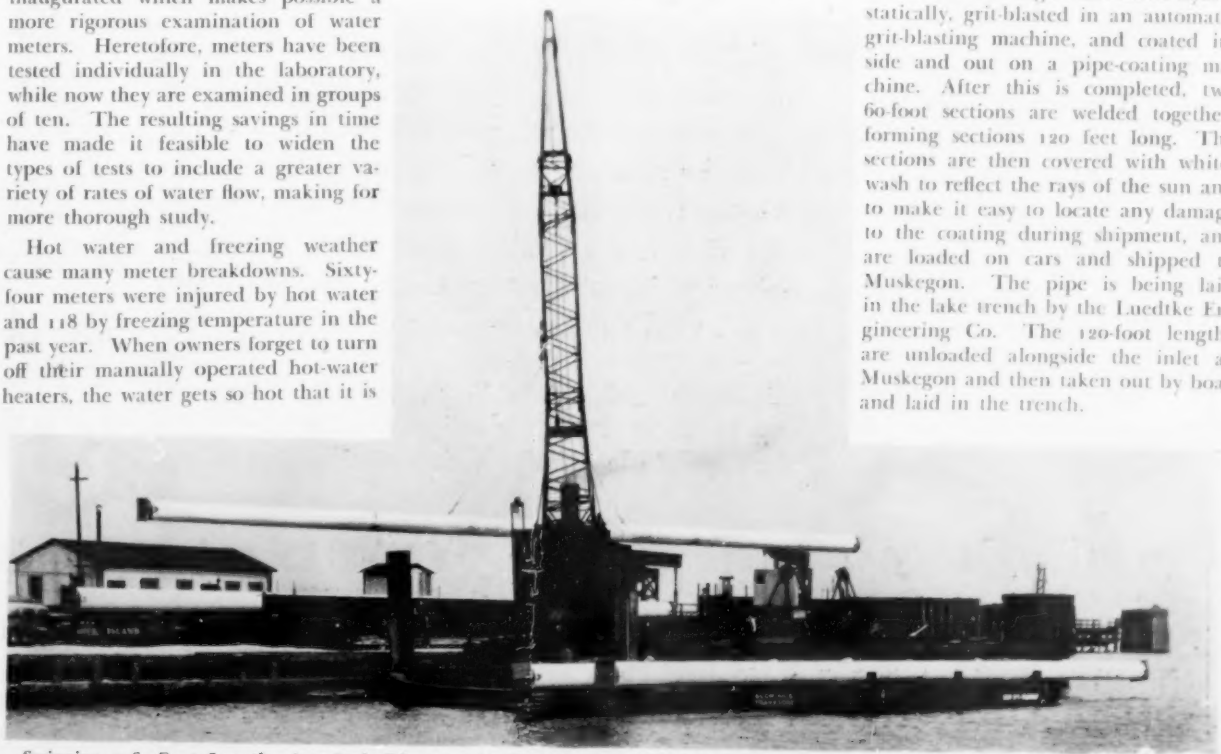
Water Department a Financial Aid

THE NET VALUE of the complete water plant of the city of Dubuque, Iowa, is $1,852,797.55, or $833,411.62 more than 1920. The Water Department has not received any tax levy or hydrant rental from the city since 1920, and has furnished free to the city all the water used by the Street, Sewer, Park, Recreation and Fire Departments, the swimming pool and all city buildings. It has contributed 20 per cent of the City Manager's, City Auditor's and City Treasurer's salaries from the Water Works General Fund. The sum of $20,000 was permanently transferred from the Water Works General Fund to the city's Bonded Debt Fund in the past fiscal year, this being a voluntary transfer by the Department. The contributions and payments mentioned above saved the city approximately $87,000 which would have had to be collected in taxes during the fiscal year 1939-1940.

Heavy Steel Intake Pipe for Muskegon Heights

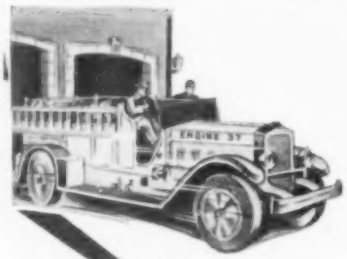
THE CITY OF MUSKEGON HEIGHTS, MICH., is installing a new 30-inch diameter steel pipe to be laid in a trench on the bottom of Lake Michigan as a new intake for its water works. The 4,620 feet of pipe is being fabricated by the Chicago Bridge & Iron Co., Chicago, Ill., from 5/8-inch-thick plates, rolled into 10-foot sections and welded automatically. Six sections are then welded together to make a 60-foot length.

The 60-foot lengths are tested hydrostatically, grit-blasted in an automatic grit-blasting machine, and coated inside and out on a pipe-coating machine. After this is completed, two 60-foot sections are welded together, forming sections 120 feet long. The sections are then covered with whitewash to reflect the rays of the sun and to make it easy to locate any damage to the coating during shipment, and are loaded on cars and shipped to Muskegon. The pipe is being laid in the lake trench by the Luedtke Engineering Co. The 120-foot lengths are unloaded alongside the inlet at Muskegon and then taken out by boat and laid in the trench.



Swinging a 60-Foot Length of 30-Inch Diameter Steel Pipe onto a Scow for Towing Out to the Trench for the New Water Intake, Muskegon Heights, Mich.

The HEART OF THE FIRE DEPARTMENT



A conflagration hazard exists in practically every community, awaiting only the outbreak of fire under adverse circumstances such as storm, high wind, or skillfully planned sabotage, coupled with a Delayed Alarm to destroy in an hour the result of years of industry. Now, more than ever, with the security of the industrial processes essential to the National Defense at stake, time is the vital element in the control of fire, and only equipment of demonstrated reliability and efficiency should be considered for this vital service.

Gamewell manufactures and installs fire alarm and police systems applicable to every community and industry. We gladly co-operate in planning such protection.

THE GAMEWELL COMPANY

Specialists in Public Safety

NEWTON UPPER FALLS ● MASSACHUSETTS

Public Safety

Motorcycle Patrolmen Get Astounding Results

In the Loop District of Memphis, Tenn., we use one motorcycle and car with two motorcycle patrolmen, and one tri-motorcycle manned by one man and equipped with radio.

These three motorcycle patrolmen cover the entire uptown restricted loop district consisting of 84 blocks. They have taken the place of 16 walking patrolmen who formerly did the same work. The results of the operation of the three men on motorcycles are astounding. They average 150 to 200 traffic tickets per day. This system enables us to take the other 13 men, who are foot traffic patrolmen, and place them at various intersections on the main streets, where they do a very effective job.

Each motorcycle patrolman makes a daily report showing the number of the motorcycle to which he is assigned, and the number of miles he travels on one tour of duty. This report also contains the number and type of arrests, total number of funerals handled, and time spent on each funeral. Funeral service is rendered as a matter of courtesy, and no charge is made. The report further shows the total number of traffic tickets turned in to the Traffic Bureau, amount of fines, and the total amount of fines assessed in City Court. In case of inclement weather, the report shows to what special detail the officer was assigned, for what period of time, and the results.

We have found that motorcycles equipped with radios are very effective in answering emergency calls, also in the apprehension of stolen automobiles, and in case of fire or any other emergency.

Joseph P. Boyle,
Vice-Mayor, Memphis, Tenn.

Meters for Parking; Buses for Traffic Flow

We Installed 306 Meters, evenly divided between the Dual and the Karpark, on only three streets, and they have improved parking considerably in that area. Where it had often been impossible to park within a block of a store, now at almost any time at least one available parking space is open within a door or two from any place of business the parker wishes to patronize.

The local bus company has, within the last few months, replaced small-type buses, originally furnished, by larger, more comfortable buses. This has helped considerably because the original equipment did not accommodate the traffic on some of the busier streets. In my estimation, the traffic situation would be materially improved in this city if more people used public buses, particularly in the industrial area where, at present, most people drive their own cars.

In the hours of the opening and closing of the factories, we have the very serious traffic problem of handling thousands of cars in a very short time on rather narrow streets. If some way could be found to induce a fair proportion of these drivers to use public conveyances, our problem would be much simplified.

Ralph D. Klebes,
City Manager, Elmira, N. Y.

Guns for Firemen

In Cooperation with the Massachusetts National Guard, the Boston Fire Department has made arrangements whereby it will have the equipment necessary to transport anti-aircraft guns in cases of an emergency, and war veterans in the Fire Department will receive instructions in the fundamentals of operation of such war equipment. The picture shows a group of firemen taking instruction from the National Guard men.

Experience of European fire departments indicates that here, too, the firemen will be the first organization called upon in the event of an air raid in this country. Thermite bombs are incendiary, and fire departments will be required to be so organized that they can attack such fires in many places at the same time.

When it comes to locating anti-aircraft guns in strategic locations in a city, the fire department can transport that equipment to whatever point is desirable, so that when the regular army appears on the scene, the guns will be ready for immediate use.

William Arthur Reilly,
Fire Commissioner, Boston, Mass.

How to Handle a Bomb

On September 13, the Newark, N. J., Police Emergency Division was informed that there was a suspicious package in the City Subway. An emergency truck was dispatched to the site. The package was a corrugated cardboard box of a cubic foot contents. The electrical stethescope disclosed no sound, ticking or otherwise. A portable General Electric X-ray with fluoroscope, connected to the lighting circuit, revealed a large round object, but nothing that looked like a mechanism.

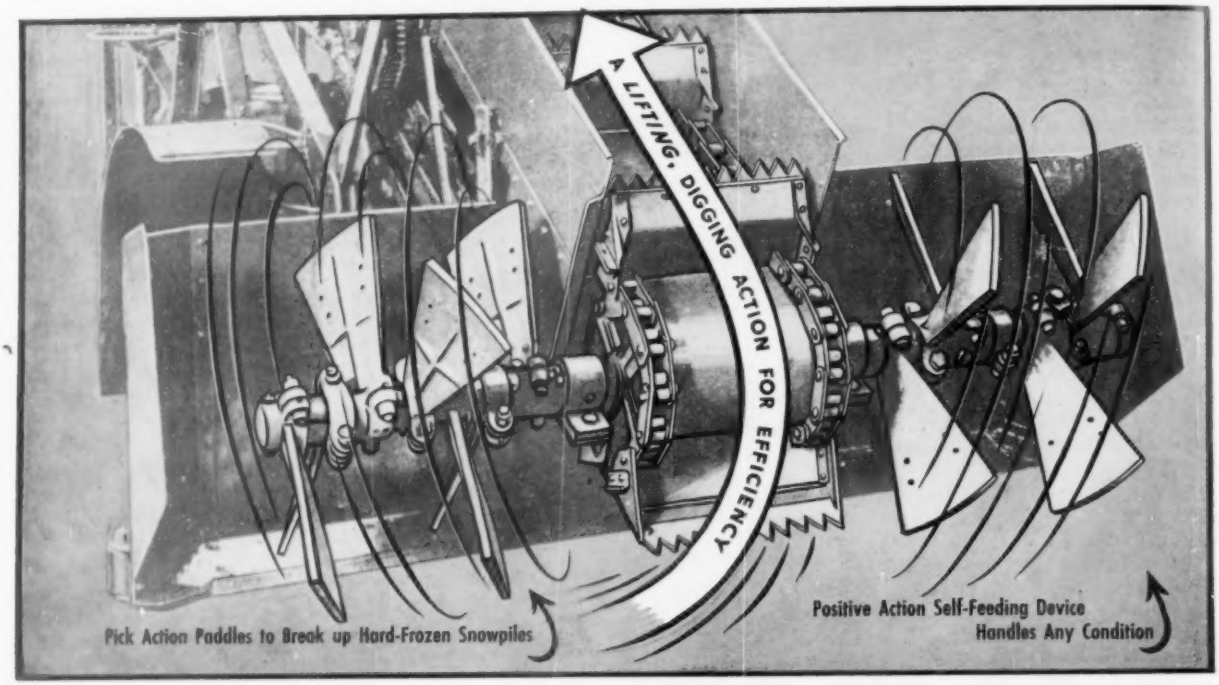
Captain Frank O'Neill, in charge, had the package placed in 10 gallons of oil in an ashcan on wheels, and taken to the bank of the Passaic River. After blasting with a Thompson submachine gun, the package was found to contain a lighting fixture. "The main thing," says Captain O'Neill, "is not to start with the idea that it may be a lighting fixture."

V. R. Quinlan.

Boston's Fire Commissioner Reilly and Chief Pope Inspecting Anti-Aircraft Guns Mounted on Piece of Reserve Apparatus

LET 'ER SNOW

A HAISS SNOW LOADER WILL PUT IT INTO TRUCKS— WET OR DRY, FRESH-PLOWED OR HARD-FROZEN SNOW PILES


A LIFTING, DIGGING ACTION FOR EFFICIENCY
Pick Action Paddles to Break up Hard-Frozen Snowpiles
Positive Action Self-Feeding Device Handles Any Condition

Here's an operating principle that WORKS. Simple machine, powerful, fast—ready for any weather condition. All-steel, so you can slush it with oil to prevent wet snow from freezing fast. Enclosed clutches and gears, tight-sealed and oil bath lubricated. No grease to harden overnight into a balky obstacle to morning start-up. Self-starter on the big Waukesha motor—and easy control of traction, steering, crowding, elevator drive, digging level, and swiveling discharge chute, all from one position on the operator's platform. If you are going to load snow into trucks, this is a machine you've got to look into. We've a new bulletin No. 1140—just off the press.

NOW on
CREEPER TREADS
(MODEL 75C)
or
PNEUMATIC TIRES
(MODEL 75W)

GEORGE HAISS MFG. CO., INC.
140th St. & Rider Ave., New York, N. Y.
DISTRIBUTORS IN ALL PRINCIPAL CITIES

HAISS

Street Maintenance

A Trackson Traxcavator on a D2 Tractor Loading a Truck, and a Caterpillar Diesel 212 Motor Grader on Street Grading for the City of Rochelle, Ill.

Road Oiling Costs in Toronto, Ontario

THERE ARE 32 MILES OF UNIMPROVED ROADWAYS in Toronto, which are treated each season with road oil for dust-laying purposes. In addition to this street mileage, there are many through lanes, which are also treated to relieve the dust nuisance created by motor traffic. Two applications are usually made each season. During the year 1939, 77,081 gallons of oil were spread.

The oil is applied by a motor truck equipped with an oval steel tank having a capacity of 1,000 gallons. It is applied warm as received from the refineries, by means of a 2½-inch perforated horizontal pipe, 8 inches from the ground at the rear of the truck. The oil is applied under pressure.

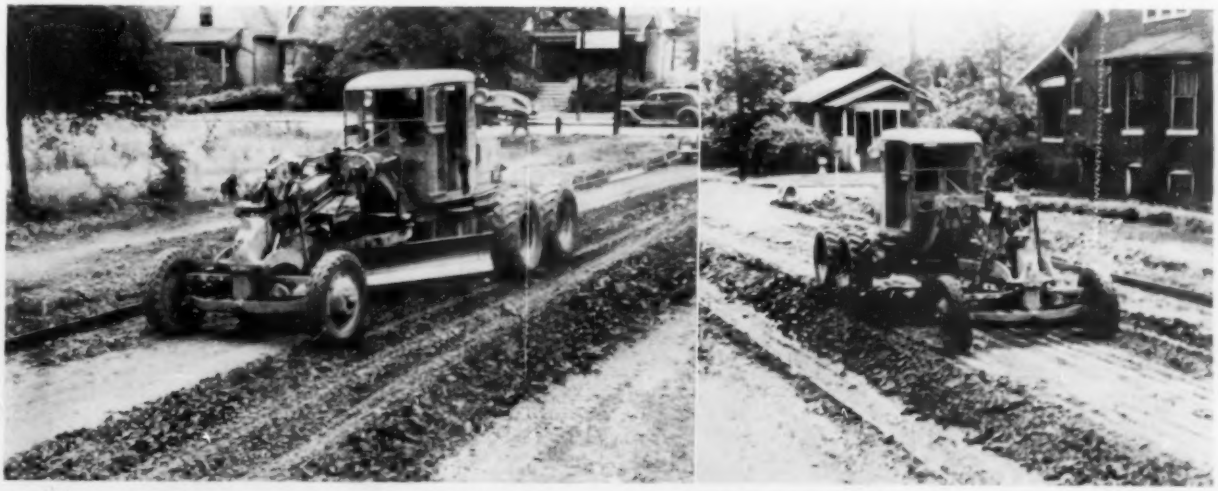
ROAD-OILING QUANTITIES AND COSTS IN TORONTO, 1929-1939

Year	Mileage	Area Oiled	Gals. Used	Total Cost, Wages and Truck Upkeep	Cost Per Mile	Cost Per 1,000 Sq. Yds.
1929	197.	1,674,054	310,899	$19,909.82	$101.07	$11.89
1930	73.1	758,320	143,320	9,890.81	135.30	13.09
1931	52.1	624,199	120,448	8,176.70	156.94	13.10
1932	27.9	362,000	57,825	3,946.53	141.45	10.87
1933	27.5	359,601	64,512	3,870.72	158.04	12.09
1934	46.2	578,841	102,565	6,217.13	134.60	9.52
1935	39.	521,971	76,675	4,722.76	121.10	9.05
1936	43.7	611,763	91,308	5,628.90	128.81	9.21
1937	51.	580,350	74,220	6,129.03	120.02	10.57
1938	48.8	535,163	67,981	4,890.89	100.30	9.15
1939	55.1	601,231	77,081	4,707.81	97.75	8.96

Grading Dirt Streets Needs More Planning

IN A RECENT ISSUE of "Research Brevities," issued by the Schenectady, N. Y., Bureau of Municipal Research, the Bureau calls attention to the crying need for more thought about the development of the city when the City Council is establishing grades on dirt streets in the outlying sections of the city. There is little doubt of the desirability of improving many of the streets which have been considered in Schenectady, since they are short, favorably located, and partially built up. The Bureau raises the question about a number of other streets, because on two of the longest no buildings existed, on one there was no water main available, and on the other the water main extends only a few hundred feet. On still another street about 1,000 feet long there is only one dwelling and that in the first 300 feet.

During the past year thousands of dollars have been borrowed by the city, according to the Bureau, and many more thousands of dollars of Federal funds have been expended on the improvement of what it terms "wilderness streets": streets laid out on paper in the real estate boom days; streets upon which there is little prospect of building activity for years to come; streets which cannot be sewered except at a prohibitive cost; streets in sections where land is so cheap and economically undesirable that accumulated tax delinquencies are approaching and in some instances exceed the assessed value.



Scarifying and windrowing a tough gumbo, preparatory to removal, and the laying of an 8-inch crushed limestone street. The city of East St. Louis, Ill., also uses this Adams No. 51 62.5-hp diesel motor grader for oil-mix work and grading playgrounds and ball diamonds

More Rubber where you NEED IT!

—that's why these new HI-MILERS give longer, safer wear

MORE rubber where you need it most—where the load is heaviest—is what makes Goodyear's new HI-MILER truck tires premium-performers.

The HI-MILER is built on new modern principles designed to meet the requirements of modern trucks and roads. Its construction concentrates more rubber in the load-carrying tread center—*making the tread 12% to 15% thicker where wear is heaviest!*

As a result, the HI-MILER has the deepest non-skid ever built on a general-purpose highway tire—*but you pay no premium in price for it.*

You get the HI-MILER'S extra *mileage*, extra *safety*, extra *endurance* and *toughness* at the same price you're now paying for ordinary tires.

You can have the HI-MILER in two different types. Full Rib Tread for hauling where long slow even wear is the main consideration. All-Weather Tread for service where you want extra grip and traction along with plus-mileage.

Choose the HI-MILER that fits your need and you'll be rewarded with high performance dividends at no extra cost. Your Goodyear dealer has both.

HERE'S WHAT YOU GET IN STEPPED-UP PERFORMANCE

Longer mileage from 12% to 15% thicker tread center

More efficient wear because of higher percentage of rubber in load-carrying area

Plus these time-proved Goodyear advantages

Greater protection from heat and fatigue due to use of lighter, stronger, low stretch Supertwist cord

Greater adherence between tread and carcass due to new stronger "multiple compound" bonding

Highest resistance to cutting, chipping and cracking from use of toughest tread compound

Hi-Miler, All-Weather, Supertwist—T. M.'s The Goodyear Tire & Rubber Company

THE GREATEST NAME IN RUBBER

GOODYEAR

MORE TONS ARE HAULED ON GOODYEAR TRUCK TIRES THAN ON ANY OTHER KIND

Sewage-Treatment Reports

Sewage-Works Operation in Topeka, Kans.

TOPEKA HAS TWO SEWAGE-TREATMENT PLANTS, a primary treatment plant in North Topeka, and a primary and secondary treatment plant in the northeast section of the city known as Oakland. The Oakland plant serves approximately 50,000 persons as well as Oakland. The Oakland plant serves the city, including two meat-packing plants, one serum plant, one large rendering works, and the Santa Fe shop district. During 1939, 24,900,000 cubic feet of sludge digester gas was recovered and used to operate internal-combustion engines in the Oakland plant 20 hours a day, furnishing 8,400 cubic feet of air per minute for use in the aeration tanks. The value of the power thus recovered represents a saving to the city of approximately $6,000 a year. The Oakland plant alone treated 2,202 million gallons of sewage in 1939.

In addition to the treatment plants, the sewage system includes five pumping stations and 125 sanitary sewered districts, with sewers totaling more than 180 miles in length. The per capita cost of operation of the sewage-treatment plant, including its five employees, was $27,216.20 for 1939, or a per capita cost of 36 cents, while the tax cost to the average property was $1.02. These costs were 1 cent lower in 1938 than in 1939.

Small Village Ousts Old Septic Tanks

SUNBURY, OHIO, with a population of about 900, has recently completed a $125,000 sewerage system and treatment plant. Previously, septic tanks were used by most of the people, and several score of homes lacked even that facility. The 6 miles of sewers, which already have 100 connections, with a potential total of 300, end at the new treatment plant just west of the village. The plant consists of a pump house, an Imhoff tank, two small sludge beds, and four large filter beds filled with white sand and surrounded by sodded levees.

The plant is designed to handle 100,000 gallons of sewage daily and uses power only to raise the sewage into the Imhoff tank, where the solids settle to the bottom and when fully digested are drawn off onto the sludge beds. The liquid flows into the adjoining dosage tank, where it is automatically applied to spraying pipes which cross the filter beds diagonally. There are four such beds with pipes, and the dosing is regulated so that they are used alternately. By the aeration of the sprays, alternation of the beds, evaporation and seepage into the soil, only a small part of the liquid flows to Prairie Run.

Lost and Found Column

A FEW WEEKS ago we visited a small sewage-treatment plant, 1½ mgd capacity, where screenings multiplied unbelievably during storms, owing to heavy packing-plant wastes accumulated in the sewers. Storms seem to come with sufficient regularity to flush off these wastes before they cause trouble, but they caused a lot of worry a few months ago to a citizen who lost his false teeth down the sewer.

He called the sewage works and asked how soon they would reach the plant from the center of town. When informed that it might be several weeks, because such heavy objects would travel slowly, he was very much worried and said they cost him $110 and that he would give a reward of $10 to the man or men who rescued them from the screens at the plant. For the next few days nothing happened, but when a storm came along, the superintendent left a man at the plant all night, and—sure enough—when the screenings came up late that night, via the Link-Belt automatic screen-cleaning device, there were the false teeth.

P. S.—The man collected!

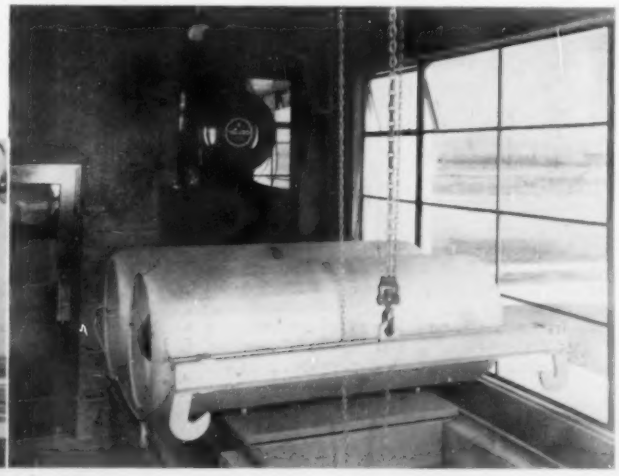
Sewage Treatment in Seattle

C. L. WARTELLE, CITY ENGINEER OF SEATTLE, WASH., reports the completion of the Diagonal Way sewage-treatment plant as a part of the Henderson Street trunk sewer system. Operation at this plant was started in August of 1939, and visitors are welcome to view it at any time.

The plant was designed for an 8,000,000-gallon flow per day and will serve a maximum population of 32,000 persons at a 250-gallon per capita per day. The equipment consists of a pumping plant that raises the sewage from the trunk sewer for a gravity flow through the plant; a Parshall measuring flume, a mechanical sand remover, two shredders, two 85-foot diameter clarifiers, two digester tanks (primary and secondary), and three glass-covered sludge beds.

The plant effluent is treated with chlorine before its discharge into the Duwamish River. Chlorine is supplied in ton containers, and the average daily consumption is approximately 100 pounds.

The Attractive Plant Control Building of the Henderson Street Sewage-Treatment Plant, Seattle, Wash., and the Chlorine Tank Toledo Scales within the Building



INTERNATIONAL

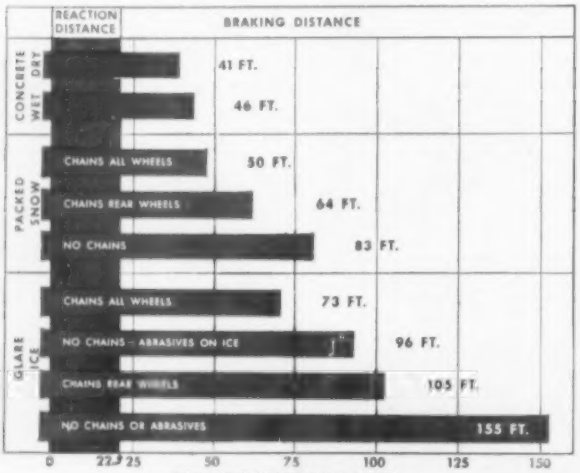
"Auger Action" ROCK SALT

Proven by every test to be most effective— and most economical—to make winter pavements safe

STREET and road officials have always known that it is far safer to have streets and roads completely cleared of ice and snow than to use any compromise method for winter driving safety. Now everyone can know how much safer the cleared pavement is—even when wet.

STOPPING DISTANCES ON VARIOUS ROAD SURFACES

Chart from the Progress Report, Committee on Winter Driving Hazards, Street and Highway Traffic Section, NATIONAL SAFETY COUNCIL



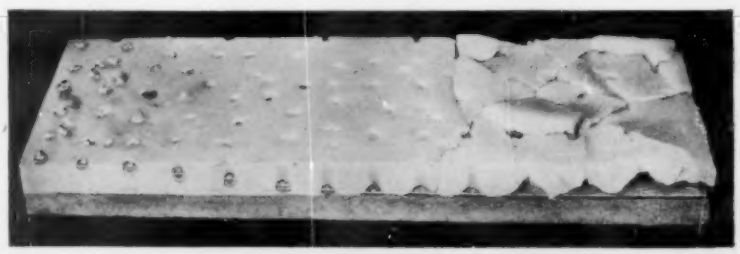
The chart below is taken from the Progress Report of the Committee on Winter Driving Hazards of the National Safety Council. It indicates to anyone that, exclusive of braking reaction distance, it takes 2½ to 7 times as long to stop a car on ice as on a bare pavement. Even with chains on rear wheels or abrasives on the ice, it takes almost 4 times as long to stop.

This means, of course, that the only true safety measures are those where the driving surface is completely cleared to give tires the utmost traction. Years of practical experience and many tests prove Rock Salt to be the most effective and most economical means of making pavements bare in winter. International's brands of Rock Salt applied early during a storm prevent snow from packing and bonding to the pavement. If ice has formed, Rock Salt's "Auger Action" loosens the bond and undercuts the slippery covering for quick and easy removal. For city streets, for open highways—use "Auger Action" Rock Salt and make pavements really safe for traffic. Write for the International folder, "Rock Salt's Auger Action."

INTERNATIONAL SALT COMPANY
INCORPORATED
Scranton, Pennsylvania

ROCK SALT'S AUGER ACTION

This is a photographic reproduction of an accurate model showing Rock Salt's "Auger Action." (1) Spread on hardpacked snow or ice, International's Rock Salt imbeds itself at once, providing immediate "anti-skid" protection. (2) As Rock Salt bores its way downward, brine is formed which undercuts the icy covering and loosens its bond with the pavement surface. (3) Traffic breaks up ice which can quickly and easily be scraped aside, plowed away or removed to make the pavement completely bare and really safe.



When you write for that catalog, kindly mention THE AMERICAN CITY.

The FASTEST METHOD of LOADING SNOW ever developed!

— Packs the largest truck to several times its normal capacity in a matter of seconds — cleans right to the curb — loads on the traffic side. No turning or backing of truck to cause delays or traffic tangles — and there is a Snogo for every budget, from a 1½ ton truck to the largest four wheel drive type of truck. Let us send you our latest bulletin.

SNOGO

For Complete Snow Removal

KLAUER MANUFACTURING CO

Dubuque Iowa

"Yuh can't ketch what ain't there!"

DON'T LET STREAM POLLUTION RUIN THE ALL-YEAR-'ROUND JOYS OF CLEAN WATERS

IF you're an ice fisherman, you know it's bad enough when the fish aren't biting. It's worse when there aren't any fish to catch!

Pollution of rivers, lakes, and streams near centers of population has taken the delight of fishing from many citizens. It has taken such forms of recreation as swimming, boating, and picnicking from thousands of others. It often affects property values adversely, and it is decidedly a menace to community health.

THE LOGICAL ANSWER

Here's the answer to this situation: a modern sewage-treatment disposal plant, which renders waste harmless and makes the waters near your community clean and safe—at a cost of a fraction of a cent per person per day.

Your sanitary and consulting engineers have facts and figures based upon the experience of many progressive towns and cities which already have started or completed stream purification projects. Why not enlist their aid? Remember, too, that General Electric engineers are prepared to assist them with the electrical end of the plant. They've cooperated on similar projects, large and small, throughout the country, and their experience enables them to handle all requirements.

Would you like to take a pictorial trip through 25 municipal sewage-treatment plants? Then write for publication GEA-1896A, General Electric, Sec. 011-580, Schenectady, N. Y.

GENERAL ELECTRIC

011-580

Catalogs Filled with Information

Either write direct to the manufacturers for their literature, or, if you prefer, put a circle around the identifying numbers below to indicate the catalogs you want, mail this coupon to The American City Magazine, 470 Fourth Ave., New York, and we will see that the catalogs are sent to you. 12-40

276 277 278 279 280 281 282 283 284
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Name ..... Position .....

Address .....

Dependable Well Water Supplies

276. In its new Bulletin 6-40, Layne & Bowler, Inc., Dept. B, Memphis, Tenn., furnishes 32 pages of illustrations and text on Layne well water supplies of the gravel wall well type, with diagrams to show comparative well production, and clear photographs of Layne shutter screens, vertical turbine pumps and a series of illustrations of unusual and representative installations. Address Dept. B.

Clarifying Water and Sewage

277. Bulletin 746 issued by The Jeffrey Mfg. Co., Columbus, Ohio, describes Jeffrey Floctrol, an installation of slow-moving paddle-wheels to improve coagulation of water or sewage through tapered mixing. The bulletin is replete with illustrations, diagrams and sectional views of equipment.

Low-Cost Processing of Sewage Sludge

278. Much more sludge would be used as a soil conditioner and a source of humus in sandy or clay lawns if sewage-works officials realized that it can be processed economically. Bulletin No. 140 of the Rover Foundry & Machine Co., 165 Pringle St., Kingston, Pa., describes the Rover sludge disintegrator, which breaks up dried sludge, making it immediately suitable for soil conditioning and fertilizing.

Sluice-Gate Handbook

279. Chapman sluice-gates for water works, sewerage and flood control projects go in easier and faster because interchangeable parts remove any need for match-marking. A copy of Chapman's Sluice Gate Hand Book describing Chapman's standard range of gates and operating mechanisms may be secured upon request from The Chapman Valve Mfg. Co., Indian Orchard, Mass.

New Book on Bituminous Pavements

280. "Lincolnite" is the title of a new pocket-size book issued by the Asphalt Division of The Ohio Oil Co., Inc., Robinson, Ill., which contains a wealth of information valuable to road officials and engineers. Copies may be secured upon request without obligation by readers of The American City.

Spiral Welded Steel Water Pipe

281. Armco spiral welded pipe assures high flow capacity, low leakage loss, and freedom from costly breakage. For further information write The American Rolling Mill Co., Pipe Sales Div., 2591 Curtis St., Middletown, Ohio.

Water-Works Specialties

282. Simplex controllers, gages, air valves, venturi type meters and sand expansion indicators satisfy the most rigid requirements of operating and designing engineers. A booklet illustrating and describing the Simplex line may be secured from Simplex Valve & Meter Co., 6789 Upland St., Philadelphia, Pa.

Flexible Cast Iron Pipe

283. Six-foot lengths of Universal cast iron bolted-joint cast iron pipe may be laid under average conditions with a radius of curvature of 115 feet without leakage. The design of the joint provides for expansion, contraction, vibration and ground settlement. This pipe can be installed under water in sandy trenches or in rocky terrain, and is furnished with hot-tar-dipped, cement or Enameline lining. For catalog write The Central Foundry Co., 386 Fourth Ave., New York.

Yokes for Quick Meter Changes

284. Ford yokes, which have been on the market for over 28 years, insure quick meter changes. Meters are set or removed by turning the handwheel of the expansion connection, which is removed with the meter. Write to Ford Meter Box Co., Wabash, Ind., for catalog.

Reinforced Concrete Tanks

285. The William S. Hewett system of reinforced concrete construction is applied to circular tanks for the storage of liquids, and results in structures that will not crack. Write The William S. Hewett System, 20 N. Wacker Drive, Chicago, Ill., for literature and estimates.

Alum in Water Treatment

286. In technical Publication No. 28, Activated Alum Corp., Curtis Bay, Baltimore, Md., gives considerable data on the chemical and physical properties and use of standard Activated Alum and dustless Black Alum. Over 52,000,000 lbs. of these coagulants have been used in water works in the past four years.

Incinerators for City Refuse

287. Nichols refuse incinerators, designed to destroy garbage and rubbish in an odorless manner, are described in detail in an illustrated bulletin which may be secured free from Nichols Engineering & Research Corp., 60 Wall Tower, New York. In addition to a list of plants of this type constructed in the last 14 years, with numerous illustrations, there are data on the average production of refuse throughout the year, and helpful sketches.

Illumination Control Equipment

288. Bulletin GEA-3258, which may be secured upon request from General Electric Co., 1 River Road, Schenectady, N. Y., illustrates and describes Novalux control equipment for street-lighting circuits. This Bulletin also contains a section devoted to GE electric time switches, and a section devoted to accurate control of street-lighting with carrier current. Kindly mention The American City when writing for this Bulletin.

The Uses of ½- to ¾-Yard Power Shovels

289. Contractors have found new ways of making money with little power shovels, and cities will find much of advantage in knowing more about the services of these shovels as described in Bulletin No. 2066, which contains 67 photographic illustrations covering virtually every phase of excavating. Copies of the Bulletin may be secured from Bucyrus-Erie Co., South Milwaukee, Wis.

Garbage and Rubbish Units

290. Gar Wood Industries, Inc., 7924 Riopelle St., Detroit, Mich., in Bulletin No. 12 gives a very complete series of photographs of the wide variety of garbage and rubbish-collection trucks made by this organization, including the well-known Load-Packer. The bulletin, in 28 illustrations, shows types of bodies adaptable to practically all loading and dumping conditions, and may be secured free on request.

Street-Lighting Brackets

291. Write for 38 pages of specification data on street-lighting brackets, mast arms, lamp hangers, pulleys and hardware. If you have the poles, here are bent-arm, straight-arm, telescopic, suburban and gooseneck brackets, illustrated and dimensioned by Hubbard and Co., 6301 Butler St., Pittsburgh, Pa.

Oil Burners

292. For list of 25 manufacturers of oil-heating equipment, who are especially interested in the heating of municipally owned buildings, write The Municipal Index, 470 Fourth Ave., New York.

Soil Stabilization with Tar

293. Full data in the form of bulletins, reprints, and a copy of Form 419, may be secured by municipal officials from The Barrett Co., 40 Rector St., New York, on the subject of soil stabilization with Barrett Tarvia. This economical method of stabilizing soil to produce a waterproof traffic-resisting surface is being used by many cities.

All-Wheel Drive Trucks for Snow Work

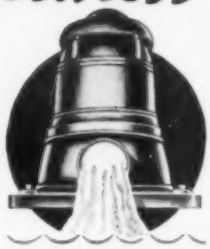
294. Form 400821-1 issued by Marmon-Herrington Co., Inc., Indianapolis, Ind., describes M-H All-Wheel Drive trucks up to 70,000 pounds gross capacity for handling V-plows and wings as well as rotary snow-plows. This line includes four- and six-wheel drive trucks from converted Fords to the largest units.

Chlorination in a Water-Sealed Vacuum

295. Vacuum-operated Sterelators for sewage-treatment plants, water works and swimming pools are made by Everson Mfg. Co., 214 W. Huron St., Chicago, Ill., and are described in detail in Bulletins 1038 and 1004A, which will be sent, free on request, to those mentioning this item.

(Continued on page 20)

IF YOU *Believe In Preparedness*



—Remember that water has always been, is now, and forever will be one of your most vital needs. It is an absolute necessity for MEN, MACHINERY AND MATERIALS. Your present water supply may not be adequate for expansion—or emergency. It may be costing you too much. It may need enlarging.

Now is the time to practice preparedness. Without delay you may secure the cooperation of Layne Engineers who will check your present water supply and offer valuable recommendations on increasing volume or the lowering of operation cost. Behind these Engineers stand the world's foremost water developers: an organization equipped and capable of making dependable preliminary investigations, reconditioning old wells, drilling new ones, furnishing and setting pumps for a complete Well Water Supply System.

AFFILIATED COMPANIES
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LAYNE-NEW YORK CO. NEW YORK CITY AND PITTSBURGH PA.
LAYNE-NORTHWEST CO. MILWAUKEE, WIS.
LAYNE-OHIO CO. COLUMBUS, OHIO
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LAYNE-WESTERN CO. KANSAS CITY, MO. CHICAGO, ILL. OMAHA, NEBRASKA
LAYNE-WESTERN CO. OF MINNESOTA MINNEAPOLIS MINN.
LAYNE-BOWLER NEW ENGLAND COMPANY BOSTON MASSACHUSETTS
INTERNATIONAL WATER SUPPLY, LTD. LONDON ONTARIO, CANADA

If you want facts about Layne Well Water Supply Systems, Layne Vertical Turbine Pumps, etc., with views and details about worldwide installations, write for illustrated literature. Address,

LAYNE & BOWLER, INC.
Dept. B, Memphis, Tenn.

LAYNE

PUMPS & WELL WATER SYSTEMS
For Municipalities, Industries, Railroads, Mines and Irrigation

MAKE A REFERENCE FILE OF YOUR CATALOG FILE

(*Continued from page 19*)

Famous "Firsts" in Parking Meters

296. Fourteen different "Firsts" of the Dual automatic parking meter will be found in literature of the Dual Parking Meter Co., Commerce Exchange Bldg., Oklahoma City, Okla., which has the largest number of repeat installations.

Centrifugal Cast Iron Pipe

297. Literature describing and illustrating Mono-Cast centrifugal pipe, available in sizes from 3 inches to 48 inches inclusive, a complete line of fittings and a wide choice of joints for special purposes, will be sent free on request to the American Cast Iron Pipe Co., Birmingham, Ala.

Watering Systems for Parks

298. The Skinner Irrigation Co., 447 Canal St., Troy, Ohio, is equipped to handle every watering problem. A catalog that explains in detail the various types of watering equipment designed to keep parks and parkways fresh and green will be sent on request.

Two New Motor Graders

299. Adams motor graders Nos. 50 and 51 have important improvements including increased power, new starting facilities, new cab, new brakes, new steering equipment and adjustable lift links. Catalogs will be sent on request to J. D. Adams Co., Indianapolis, Ind.

Insulated Wire

300. Performite, a product of Hazard Insulated Wire Works, Wilkes-Barre, Pa., meets municipal, Federal and A. S. T. M. specifications. It has a guaranteed tensile strength of 1,500 pounds per square inch, does not corrode the conductor, resists heat and moisture, strips freely from the conductor, and goes far beyond specification requirements in accelerated aging tests. A folder describing Performite may be secured from the manufacturer.

Security in Fire Hydrants

301. The slide-gate principle developed by Ludlow insures complete security in fire hydrants. It provides quick water with least possible shock, proper shut-off without water hammer, proper drainage, easy inspection and servicing without unscrewing anything below ground level. Accidental breakage will not cause a flood, since the gate when closed is wedge-locked. For further information write The Ludlow Valve Mfg. Co., Inc., Troy, N. Y.

Expansion Joints of Many Types

302. Since 1914, Servicised has been originating, developing and improving expansion joints. Standard fiber, fibrated asphalt, sponge rubber, cork, cork-rubber, or the new self-adjusting or self-conditioning joints, are supplied by Servicised Products Corp., 6051 W. 65th St., Chicago, Ill., from which full information may be secured.

Street-Lighting Refractors

303. Holophane refractors for the distribution of light where it is needed meet the three fundamental requirements of modern street lighting, effectiveness, efficiency and economy. For illustrated literature write direct to Holophane Co., Inc., Street Lighting Div., Newark, Ohio.

Two-Way Police Radio

304. The compact, self-contained Western Electric car transmitter and receiver units are easily installed, and both units operate without excessive drain from any 6-volt car battery system. A telephone handset puts the car that is in action in complete contact with headquarters, and a simple "press-to-talk" switch is the only operating control. For further information on police radio or other communication equipment write direct to Graybar Electric Co., Graybar Bldg., New York.

Jointing Mains Without Calking

305. Leadite, which is used for jointing cast iron water mains, is simply melted and poured around the bells, requiring no large bell-holes, no calking, and is said to save at least 75 per cent of the cost of jointing cast iron water mains. Complete information and prices may be secured from the Leadite Co., Girard Trust Co. Bldg., Philadelphia, Pa.

A Self-Trimming Refuse Collector

306. The Keystone self-trimming refuse collector handles a maximum load in a minimum space, basing economy on tonnage, not yardage. Keystone Equipment Corp., 111 S. Fifteenth St., Philadelphia, Pa., will be pleased to make a survey of your refuse-collection problem and demonstrate the unit.

Lighting for Visibility and Safety

307. Engineering counsel and information on Westinghouse traffic safety lighting for streets, highways and bridges may be secured from your nearest Westinghouse lighting specialist, or from the Lighting Div., Westinghouse Electric & Mfg. Co., Edgewater Park, Cleveland, Ohio.

Fences Keep out Saboteurs

308. Stewart fences for all public property, giving the maximum of protection for the minimum of expense, are described in Catalog No. 79, which shows typical installations, specifications, construction details, sizes, materials, spacing and other important information. Get your catalog from the Stewart Iron Works Co., Inc., 721 Stewart Block, Cincinnati, Ohio.

(*Continued on page 21*)

MAKE A REFERENCE FILE OF YOUR CATALOG FILE

(*Continued from page 20*)

New Primer on Tax Accounting

309. A booklet entitled "Smash," issued by Underwood Elliott Fisher Co., 1 Park Ave., New York, tells you in ten minutes the essence of modern municipal tax accounting, billing and posting and shows that budgetary control and other kinds of accounting are capable of similar simplification.

Metering and Controlling Equipment

310. The Flo-Watch meter will help you eliminate waste, check pump operation and efficiency, check boiler efficiency, etc. Write Builders Iron Foundry, Providence, R. I., for Bulletin 318, which illustrates and describes in detail the Flo-Watch.

Self-Priming Pumps

311. Paper No. P-3213 which may be secured from De Laval Steam Turbine Co., Trenton, N. J., describes the De Laval automatic self-primer, which keeps pump, suction line and all connections continuously primed so that the pump will deliver whenever the motor is started. Kindly mention THE AMERICAN CITY when writing for this paper.

Water Meters Proof Against Frost

312. It won't be long now before the cold winds begin to blow and water departments will be glad to have installed Federal frost-proof meters, which are not only frost-proof but fool-proof, reliable, with accurate registers, giving faithful day-in-and-day-out service for years on end. Catalogs on these meters may be secured from the A. P. Smith Mfg. Co., East Orange, N. J.

Enamel-Lined Steel Water Mains

313. Youngstown coated, wrapped, lined and coupled steel pipe is economical and has a maximum life expectancy. It excludes tuberculation and encrustation, and assures a maximum flow and minimum pumping cost. For further information write The Youngstown Sheet and Tube Co., Youngstown, Ohio.

Corrosion-Resistant Water Pipe

314. J-M Transite pipe, made of asbestos and cement, combines uniform strength and durability with corrosion resistance and, because it cannot tuberculate, it maintains its smooth interior indefinitely. Its long lengths, light weight and simple assembly assure fast, economical installation. Write Johns-Manville, 22 E. 40th St., New York, for Brochure TR-11A, which will be sent without cost.

Easier Pumping from Deep Wells

315. By lifting water a different way, the Peerless Hi-Lift pump simplifies pumping, increases the pump life and reduces power cost. Full information will be found in a bulletin of the Peerless Pump Div., Food Machinery Corp., 301 West Avenue 26, Los Angeles, Calif.

Police Uniforms

316. Reeves Army twill, which meets U. S. Army requirements, and Glengarrie, poplin for matching shirts, both fabrics Sanforized, are used for police uniforms by many cities. Complete information may be secured from Reeves Brothers, Inc., 54 Worth St., New York.

Truck Value for City Departments

317. A choice of two improved V8 engines, new 4-cylinder super-economy engines, modern styling, rugged, dependable full-floating rear axles and other improvements, are included in the 1941 Ford trucks. Complete information on these trucks may be secured from the Ford Motor Co., Detroit, Mich.

Concrete Pipe for City Sewers

318. Full information on concrete pipe for city sewers may be secured from the Portland Cement Assn., Dept. 11-4, 33 W. Grand Avenue, Chicago, Ill. There are two important steps to insure the success of the sewerage problem: place the work in the hands of a competent sanitary engineer; and specify the proper size, material and strength of pipe.

Centrifugally Cast Iron Pipe

319. Complete information on Super-deLavaud chill-free centrifugally cast pipe of standard cast iron which has a long record of serviceability and is converted into pipe by improved and carefully controlled casting methods, is described in detail in literature that may be secured from U. S. Pipe & Foundry Co., Burlington, N. J.

Variable Capacity Sludge Pumps

320. Bulletin 815 recently issued by Ralph B. Carter Co., Hackensack, N. J., describes in detail the Carter line of standard duplex sludge pumps and standard stroke variable speed units in simplex and duplex types up to 200 gallons per minute maximum capacity.

Gratings and Stair Treads

321. Open steel flooring for water works, pumping stations and sewage-treatment plants, as well as stair treads, bridge decking and platform flooring, are described in a new illustrated bulletin containing a table of safe loads and other design data, which may be secured from Wm. F. Klemp Co., 6601 S. Melvina Ave., Chicago, Ill.

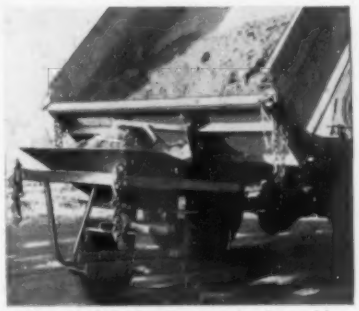
Snow Removal at Airports

322. Snogo rotary snow-plows, which throw the snow for a long distance in clearing runways at airports, or may be equipped with a special loader for delivering the snow into trucks, are described completely in literature that may be secured from the Klauer Mfg Co., Dubuque, Iowa.

ICY ROADS AND STREETS

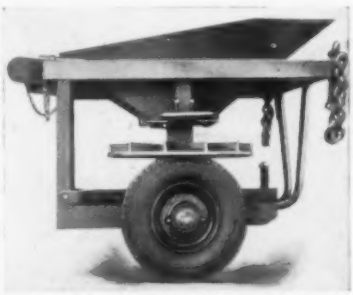
CAN BE MADE

SAFE for traffic because Galion builds an efficient highway sander to spread sand, stone dust, rock salt, chips, cinders or calcium chloride . . . two lanes wide by single trip of truck. Safeguard those streets now . . . do it at intersections if no other place.



Raising truck body places sander in position for spreading (above). Lowering body puts it in position for transit.

FOR years now Galion has been building all types of road machinery . . . economical units to do the job right. The low-cost sander is just one unit in this broad line . . .a splendid performer—easy to operate—positive in action. Spreads with truck moving forward or backward.



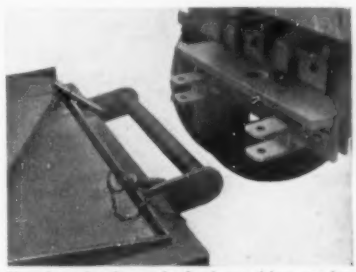
Two models—the lightweight model No. 67 is shown above.

TRAFFIC must move and as safely as possible. You can help . . . Galion can help. Let's do something about it for the increasing traffic toll is the greatest emergency we have to face today. Investigate this Galion sander which does so much for so little.

•

Views right and below show how the Galion sander works. Your fleet of trucks equipped with these units will provide prompt service to all localities. Also snow-plow attachments, motor graders, pull graders, rollers and spreaders.

Send for literature.



Showing simple method of attaching sander to truck. View below shows material being spread two lanes wide as truck moves forward.

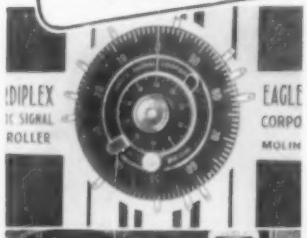
The Galion Iron Works & Mfg. Co.

Main Office and Works: Galion, Ohio

A Merry Christmas

SERVICE MEN KNOW
what low-cost maintenance means
DEMAND "EA" CONTROLLERS

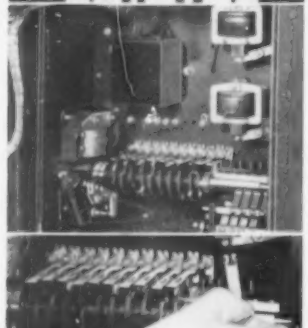
Because

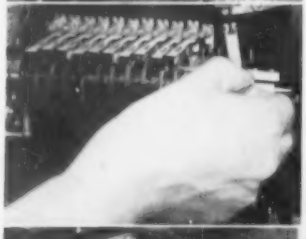


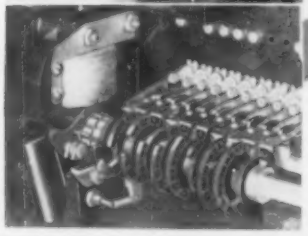
The Eagle "EA" CO-ORDIPLEX Controller fills every traffic need—from the simplest, isolated, two-movement intersection to the most complicated multi-street junction.

1. It is easy to ADJUST.
2. It has no RELAYS.
3. It has BALL and SOCKET contacts.
4. It has ROTARY ACTION Mechanism.

In fact—EAGLE "EA" CONTROLLERS will give you a MERRY CHRISTMAS every day for years and years to come.







Write for Bulletin No. 269

EAGLE SIGNAL CORP.
Factory and General Offices, MOLINE, ILL.
Executive Sales Office, BOSTON, MASS.

WORTHINGTON - GAMON

Worthington-Gamon Meters represent the utmost in durability and accuracy, to meet present and future requirements.

WORTHINGTON-GAMON METER CO.
General Offices: HARRISON, NEW JERSEY

WORTHINGTON - GAMON

SPEED WINTER CONSTRUCTION WITH HOT WATER

On ordinary contracts, delays, tieups and shut downs cost money. On "Defense Contracts" . . . there can be NO DELAY. AEROIL Oil-burning Single and Double Coil Water Heaters produce up to 1600 gals. of hot water per hour. Burn ordinary kerosene. Used for Central Mixing Plants and with concrete heaters . . . or wherever a portable hot water plant is needed. Send for FREE Bulletin No. 210A.

CONCRETE HEATERS
Bulletin No. 208A
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Bulletin No. 212A
STEAM THAWERS FOR HYDRANTS & CULVERTS
Leaflet No. 377A

AEROIL BURNER CO., INC.
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HOTEL CHELSEA SPECIAL WEEKLY RATES

Enjoy the Seashore
THE YEAR 'ROUND

Delightful in any season, Atlantic City is never nicer than right now. And whether you seek recreation or relaxation, the Hotel Chelsea is splendidly equipped to make your visit comfortable and pleasurable. Outside rooms • Sundeck • Beautiful dining room at ocean's edge • Superb cuisine • Sports • Entertainment • Magnificent Bar •

From
$6 Room, Bath, Meals
$3 Room Only & Bath
Per Person, 2 in Room

ATLANTIC CITY
JOEL HILLMAN • J. CHRISTIAN MYERS • JULIAN A. HILLMAN

This or this—this winter?

THIS IS OUT · · · THIS IS IN

LL'S CLEAR! Clear for cars and ucks . . . for pedestrians . . . clear for usiness and your community's welfare. Make it possible this winter! Use fast, powerful Model IB tractors o plow or sweep snow from walks, streets, park roads, driveways, alleys —"V" type or blade plow or broom s quickly attached to frame. Short urning radius and adjustable rear read enable the IB to travel and wing about in narrowest places. Economical to operate—uses only ½ gal. fuel an hour. Quickly, easily handles heavy falls—plenty of power—13½ drawbar h.p. . . . lots of speed—up to 10 m.p.h. Available with electric lights, starter and cab.

Keep ahead of the storms this winter. You can do it . . . far easier . . far more economically with an IB. Let your Allis-Chalmers dealer prove it . . . NOW.

LOAD SURPLUS SNOW...with Hough Shovel and WM Tractor

A quick way to clean your streets! Full ½-yard bucket. Available with flat track shoes to protect black top or concrete. Moved from job to job by truck, trailer or its own transport wheels.

ALLIS-CHALMERS POWER

TRACTOR DIVISION—MILWAUKEE, U.S.A.

TRACTORS, ENGINES, ROAD MACHINERY

IT DOESN'T COST . . *it Pays!*

STARTED **1907**

MAIN CLEANING EXCLUSIVELY FOR 34 YEARS

1940

STILL GOING STRONG

What This Means to Water Departments:

1. It means expert handling of every phase of the pipe cleaning job:—knowledge on the part of each National superintendent of just what to do, no matter what difficulty or unforeseen condition arises—efficient supervision of your own local labor so as to accomplish each job in minimum time, at minimum cost, with minimum interruption of the line, and minimum digging up and cutting of pipe.

2. It means superior equipment specially designed for one purpose—water main cleaning; equipment of various sizes and types, to cope with all sorts of pipe cleaning conditions and do the best possible job with all sizes of pipe, from 4" to 60"; equipment constantly being revised and improved, all during these 34 years, to meet each new pipe cleaning condition as it arose; equipment capable today of successfully tackling *every* pipe cleaning job—no matter how difficult.

RESULTS!

"Coefficient before cleaning was 69, after cleaning 138."
"Where we were getting 6 million gallons in 24 hours with our 2 large pumps operating, we now get around 7 million."
"Cleaning has dropped our overall pumping cost $3.48 per million gallons."

Hundreds of letters like these in our files.

The National Water Main Cleaning Company
Contractors for the Cleaning of Water Mains
30 Church Street, New York

Branches
115 Peterboro St., Boston, Mass.
910 William-Oliver Bldg., Atlanta, Ga.
7103 Dale Ave., St. Louis, Mo.
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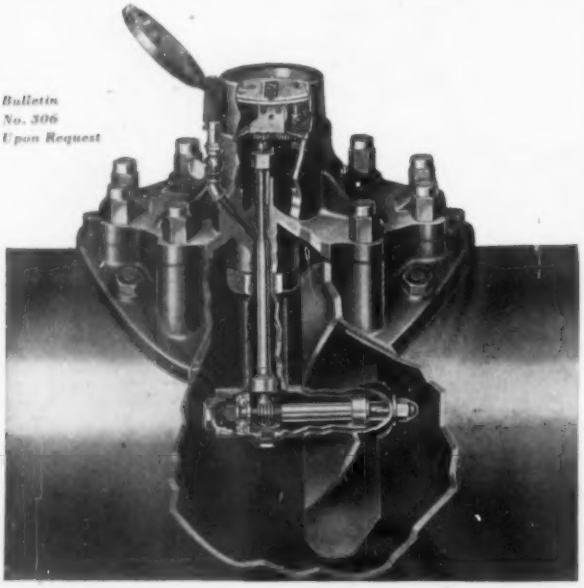
205 W. Wacker Dr., Chicago, Ill.
501 Howard St., San Francisco, Calif.
2028 Union Ave., Montreal, Can.

Bulletin No. 306 Upon Request

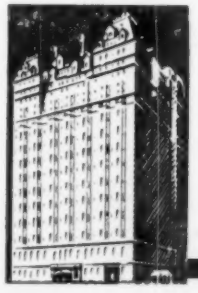


MAIN-LINE WATER MEASURING EQUIPMENT

Every Sparling Meter is a complete Totalizing Unit—accurate, economical, lowest in pressure loss. Saddle or tube mounting easy to install. Full line of Indicators, Recorders and Controls.

SPARLING

LOS ANGELES 945-951 North Main St. | CHICAGO 3104 S. Michigan Ave. | CINCINNATI 622 Broadway | NEW YORK 101 Park Avenue



Home, to Thousands of World Travelers

Whenever and wherever well-traveled people meet and Philadelphia is mentioned, immediately the "Bellevue," its service, food, atmosphere, become the absorbing topic. Reasonable rates.

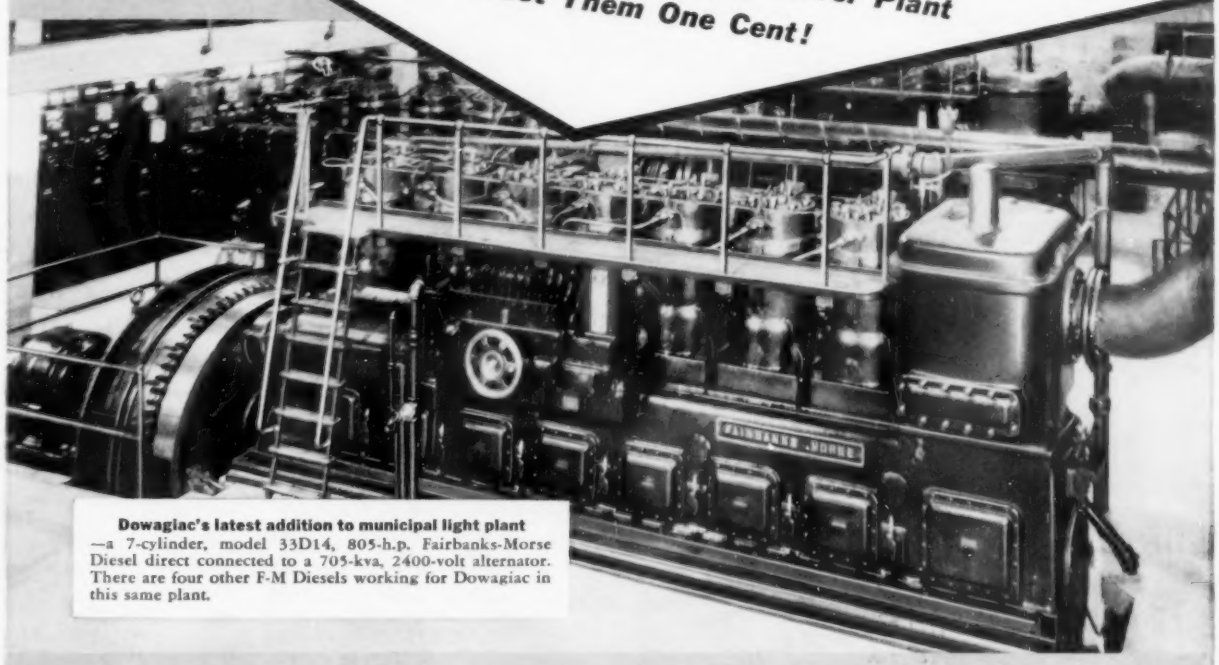
BELLEVUE-STRATFORD
IN PHILADELPHIA

CLAUDE H. BENNETT, *General Manager*

F-M DIESEL DIVIDENDS

CITIZENS of DOWAGIAC SAVE $44,600 PER YEAR

... and Their $250,000 Municipal Power Plant Didn't Cost Them One Cent!



Dowagiac's latest addition to municipal light plant —a 7-cylinder, model 33D14, 805-h.p. Fairbanks-Morse Diesel direct connected to a 705-kva, 2400-volt alternator. There are four other F-M Diesels working for Dowagiac in this same plant.

DOWAGIAC, MICHIGAN has one of the finest and most completely equipped electric plants in the United States. The building houses five Fairbanks-Morse Diesels, alternators, an overhead traveling crane, switchboard of the latest design, voltage regulators to eliminate flicker, and other equipment. There have been *eight rate reductions* within the past few years, all made by or because of the municipal plant. These reductions now save current users of Dowagiac $44,600 per year—and the entire plant—building, equipment, and all—*didn't cost the taxpayers of Dowagiac one cent!* No general tax bonds were ever issued.

Naturally, all of this didn't take place in a day. Dowagiac has generated its own power for years, starting in a small way with a small F-M Diesel. As demand grew and as the Diesels paid for themselves, Dowagiac added more F-M Diesels.

Hundreds of case histories prove the benefits to taxpayers of municipally operated light plants powered with Fairbanks-Morse Diesels. Lower taxes, lower rates, free street lighting, free fire fighting equipment, and other benefits make an intensely interesting and *profitable* story to hear. Few indeed are the towns and cities whose citizens wouldn't welcome these benefits.

Write Fairbanks, Morse & Co., 600 S. Michigan Avenue, Chicago, Illinois. Branches and service stations throughout the United States and Canada.

1736-OA96.149

FAIRBANKS-MORSE

DIESEL ENGINES
PUMPS
ELECTRICAL MACHINERY
FAIRBANKS SCALES
RAILROAD EQUIPMENT
WATER SYSTEMS
WASHERS-IRONERS
FARM EQUIPMENT
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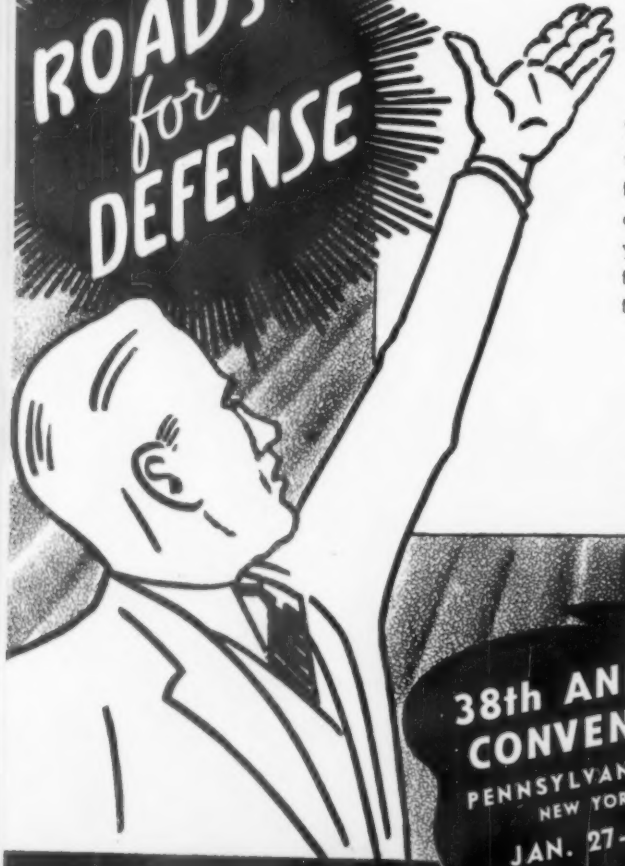
AIR CONDITIONERS

Diesels

Come and get the Answers!

- How best to use taxes for Highways?
- What do Contractors expect in bidding?
- How shall we redesign Intersections?
- The Legal Angle on contracting—things you need to know!
- Traffic—how to analyse it!
- A new problem for the Highway Department—the Airport!
- What does Military Transport do to Roads?
- Super Highways—the Big Jobs of the future!
- What about new things in Snow and Ice Control?
- Why develop the Interregional Roads?

ROADS for DEFENSE



These subjects are close to your job—men who have found the answers are going to tell you about them—give you a chance to discuss them—ask questions! Here's the year's opportunity to get real help on the things that are bothering you most. Note the date—plan now to come.

—MOTION PICTURES
—INSPECTION TRIPS
—OPEN DISCUSSION
—EXCHANGE OF EXPERIENCES
—FUN!

38th ANNUAL CONVENTION
PENNSYLVANIA HOTEL
NEW YORK CITY
JAN. 27-31, 1941

AMERICAN ROAD BUILDERS ASS'N.
International Building
Washington, D. C.

Without PUBLIC TRANSIT Principles...

Skyscrapers Would Need Traffic Cops

THE busy gentleman holding back the crowd is a new type of traffic cop; he's a lobby cop in this unique skyscraper that allows only one passenger at a time in its elevators. Unusual, isn't it? But this is just our way of showing that a skyscraper would need a squadron of lobby cops if it discarded public-transit principles in moving its population. In elevators, *one at a time* is ridiculous; it just wouldn't be considered.

Yet, in effect, *one at a time* is often the situation on our streets—and traffic congestion is the inevitable result. The nation-wide average for the number of people riding in each private automobile is only 1.75. Even our fanciful skyscraper's elevator with its operator and its single passenger carries more than this.

Given really modern transit facilities, however, many auto riders become public-transit riders, a fact demonstrated by the permanent increases in patronage that result when really modern transit vehicles are available to the public.

Public transit is the most efficient user of street space. Modern transit vehicles change *slow* traffic into *flow* traffic — a remedy for traffic congestion that pays its own way. General Electric, Schenectady, New York.

ENCOURAGE PUBLIC TRANSIT—IT'S THE WAY TO MOVE PEOPLE

GENERAL ELECTRIC

108-24

"ONE CONTRACTOR * * * * * suggests advertising all contracts of $50,000 or more in the ENGINEERING NEWS-RECORD

FOR THE REASON THAT ALMOST ALL CONTRACTORS WATCH THIS MAGAZINE WHEN LOOKING FOR NEW WORK TO BID ON."

The foregoing quotation is from a pamphlet issued by a municipal research bureau. Under "Local Opinion" it reviews the answers to a questionnaire sent *contractors* relative to the letting of contracts by a large eastern city.

If you want the benefit of the lowest prices consistent with good work advertise your contracts in the Official Proposal Columns of ENGINEERING NEWS-RECORD the "MAGAZINE CONTRACTORS WATCH WHEN LOOKING FOR NEW WORK TO BID ON."

Sample copy free to civic officials, with rate and circulation details.

ENGINEERING NEWS-RECORD 330 W. 42nd ST. NEW YORK, N. Y.

LEADITE

FOR JOINTING CAST-IRON WATER MAINS

Melted and Poured ***No Large Bell-holes to Dig***

Saves at Least 75%

Leadite is shipped in powder form, packed in sacks of 100 lbs. net each
Leadite tested and used for over 35 years ● Leadite joints improve with age

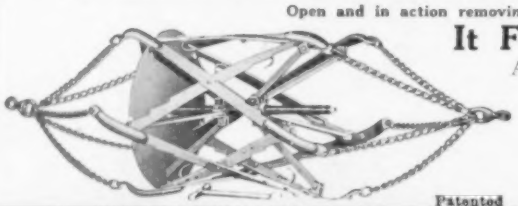
Be sure it is Leadite and accept no imitations

THE LEADITE COMPANY
Girard Trust Co. Bldg., Philadelphia, Pa.

No Caulking

EXPANDING ROOT CUTTER & SEWER CLEANER

Open and in action removing roots and caked sediment like this.



Patented

It Fits in on Every Sewer Cleaning Job

Adjusted in 30 seconds to fit any sewer from 8 to 30 inches.
Will clean the entire sewer wall, top, and sides as well as the bottom, cutting and removing the roots and caked sediment, putting the sewer system in almost 100% clean condition.

Write for our new catalog on complete sewer cleaning equipment.

EXPANDING SEWER MACHINE COMPANY
108 East Walnut St. Nappanee, Ind.

IN WATER PLANTS

Raw Water Aeration
Quick Chemical Mixing
Coagulant Mixing
Contact Mixing
Recarbonation
Filtered Water Aeration

IN SEWAGE PLANTS

Activated Sludge Aeration
Trickling Filter Auxiliary
Mixing for Chemical Precipitation

"Smog Suction"
AERO-MIX
AERATOR-MIXER

A type and capacity to fit every existing or contemplated plant.

Gravity—Rotary
Pneumatic—Pressure

Write for illustrated folder.

Vogt Mfg. Co. Inc. P. O. BOX 1122 LOUISVILLE - - KY.

10 WAYS to Get more work out of your MOTOR TRUCKS

How? Equip them with the *Servis Recorder*. It points out all delays. It records idle time, busy time, day and night (and overtime, too)—all on a waxed chart (see at left). Write for booklet: *"Ten Ways of Getting More Work Out of Motor Trucks."*

This 16-Page Booklet FREE!
—invaluable to fleet operators.

The SERVICE RECORDER Co., 1422 Euclid Ave., Cleveland, O.

The Servis Recorder
Tells Every Move Your Truck Makes

Quiet Subway Entrance to all Points of Interest

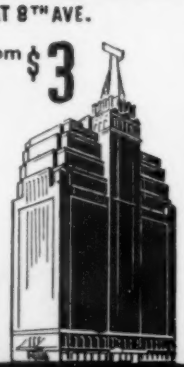
New York's Popular

HOTEL LINCOLN

44TH TO 45TH STS. AT 8TH AVE.

OUR CHOICEST ROOMS From $3

1400 ROOMS each with Bath, Servidor, and Radio. Four fine restaurants acclaimed for cuisine.



MARIA KRAMER
PRESIDENT
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HOTEL EDISON
SAME OWNERSHIP

IN THE CENTER OF MID-TOWN NEW YORK

the beautiful

WALT DISNEY STUDIOS

IN BURBANK, CALIFORNIA

ARE WELL SERVED *by*

P.DM

ELEVATED WATER STORAGE

PITTSBURGH-DES MOINES STEEL COMPANY

P.DM

MODERN and fine in every detail is the home of Walt Disney's immortal creations for the silver screen . . . and the careful planning that produced this efficient plant included a P.DM Elevated Steel Tank for better water service and protection. This handsome unit, of 150,000 gallons capacity, provides assurance of dependable supply, stabilized pressures, continual fire protection (with lower insurance rates), and maximum economy of pump operation . . . advantages that can benefit every industrial water consumer. Let us give you the facts as they apply to your own operations, without obligation!

PITTSBURGH · DES MOINES STEEL CO.

PITTSBURGH, PA. 3412 NEVILLE ISLAND—DES MOINES, IA. 913 TUTTLE ST.

NEW YORK, ROOM 915-99, 270 BROADWAY . . . CHICAGO, 1216 FIRST NATIONAL BANK BUILDING

The EDDY Valve

The Eddy Valve has a number of distinctive features which it will pay you to study. For example, the gates are free to revolve on the trunnions, so as not always to seat in the same position.

Write us for further details.

Also manufacturers of the well-known Eddy Hydrant

EDDY VALVE COMPANY

WATERFORD — NEW YORK

Representatives

Jas. B. Clow & Sons, Chicago, Ill.

National Cast Iron Pipe Co., Birmingham, Ala.

Cast Iron Pipe

PLAIN CAST OR SPUN CENTRIFUGAL

Cast Iron Pipe and Special Castings, Bell and Spigot, Flange, Flexible Joint, Culvert, Milled and Plain End Tubes, Cylinders, Flanged and Bell and Spigot Fittings, High Pressure Fire Service Pipe, Warren Short Body Specials, Threaded End Pipe.

Size 2 to 84-inch

Pipe manufactured in accordance with standard specifications adopted and approved by water works associations and engineers.

Warren Foundry & Pipe Corp.
11 Broadway, New York City

Warren Pipe Co. of Massachusetts
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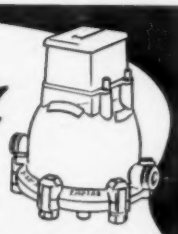

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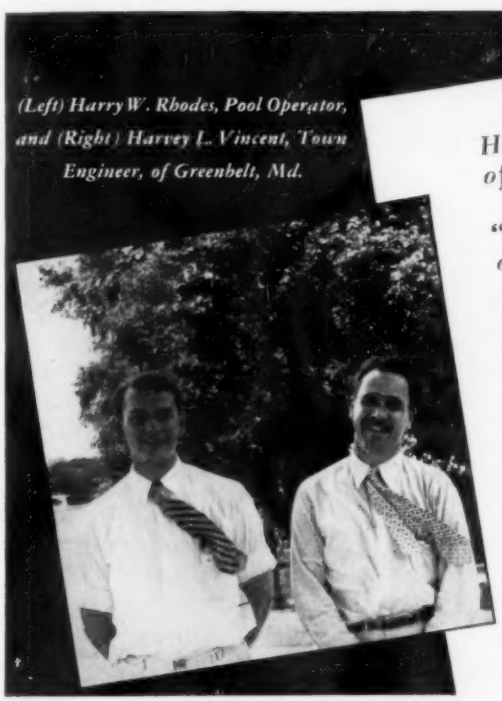
DEMANDS DEPENDABLE SOURCES OF SUPPLY



(Left) Harry W. Rhodes, Pool Operator, and (Right) Harvey L. Vincent, Town Engineer, of Greenbelt, Md.

Harvey L. Vincent, Town Engineer of the Town of Greenbelt, Maryland, says:

"We have been using HTH in several ways since our operations started in 1938.

"We keep a good supply of this product on hand and consider it a stand-by source of chlorine in case we encounter any trouble with the chlorination equipment at either the swimming pool or the sewage treatment plant.

"We also use your liquid chlorine for sewage treatment plant operations, and are glad to take this opportunity to express our appreciation of the good service which your organization has given us. Dependable sources of supply are an important asset in the successful management of community and municipal services."

● Greenbelt, Md. typifies the modern suburb. And its Town Engineer, Mr. H. L. Vincent, expresses the modern point of view in his appreciation of Mathieson sanitation service. Trouble-free containers and valves, and prompt delivery service, keep Mathieson Chlorine in tune with modern ideas of efficiency. HTH offers a dry, free-flowing chlorine carrier delivering over 70% available chlorine—quick, handy sterilizer for many special and emergency jobs.

Greenbelt's community swimming pool and surroundings are also kept sanitary the modern, efficient way—with Mathieson Chlorine and HTH.

But most of all, you will appreciate —as do hundreds of other sanitary engineers—the dependability of Mathieson as a source of supply, a dependability established for nearly fifty years.

HTH comes in 5 lb. cans with replaceable caps, packed 9 cans to the case; also in 100-lb. drums.

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Do you mention THE AMERICAN CITY? Please do.

1 The new "Century" Asbestos-Cement Pipe line at St. Marys, Ohio, was laid under great difficulties because it was laid underneath an existing creek. "Century" Flexible Couplings made easy work of coupling the lengths of pipe down in the water-filled trench.

K&M "Century" PIPE BRINGS ST. MARYS, OHIO, A NEW INDUSTRY

A large manufacturer had his eye on a desirable plant site in St. Marys, Ohio. There was only one hitch—the municipal water supply lay more than a mile away. Could the city afford to lay the needed pressure line, and do it quickly enough to clinch the manufacturer's decision?

It could—and did—with the economical help of "Century" Asbestos-Cement Pipe. 5630 feet of 10" Class 100 "Century" Pipe were quickly laid, under the toughest conditions. A creek kept trenches water-filled, yet "Century" Flexible Couplings made connecting easy and leak-proof. The light weight and handling ease of the pipe cut laying cost to a minimum.

The line is sound and permanent, ready for generations of corrosion-proof, tuberculation-proof service. Write Keasbey & Mattison, asbestos specialists since 1873, for free catalogue, "Mains without Maintenance." Address Dept. 1017.

2 Conditions such as these made it impossible to couple the pipe on top of the trench, and forced the work to proceed practically under water. Since these water conditions are permanent, it was doubly important to use absolutely corrosion-proof pipe.

3 Showing the handling ease offered by "Century" Pipe because of its light weight. Except with the largest sizes, no mechanical equipment is needed. Yet "Century" Pipe is tough and strong, able to deliver leak-proof, trouble-free service indefinitely.

4 Mr. W. R. Cook, Director of Public Service and Safety for St. Marys, who had charge of this difficult job. Mr. Cook says, "The low first cost of 'Century' Pipe, and its low laying and maintenance costs, made it possible for us to go ahead with this new line."

KEASBEY & MATTISON
COMPANY, AMBLER, PENNSYLVANIA

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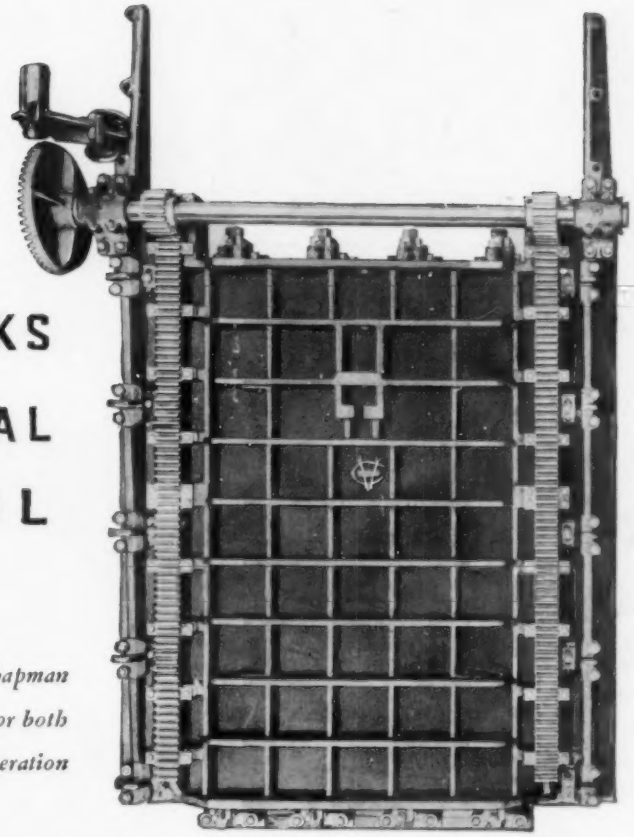
WATERWORKS

SEWAGE DISPOSAL

FLOOD CONTROL



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No time lost selecting replacement parts. Parts fit perfectly, saving labor. Fewer meters returned from the Test Bench for rework.

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Interchangeable parts are your assurance that your Tridents will never become obsolete through future improvements.

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Interchangeable parts permit you to increase your standards of accuracy for repaired meters at the Test Bench.

* * *

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50 WEST 50th ST. NEW YORK CITY
Branches in Principal Cities

Nearly MILLION SOLD THE GREAT MAJORITY STILL IN SERVICE

Vol. LV, No. 12 The American City *December, 1940*

Sabotage of Water Works

Why Sabotage?
Who May Attempt It?
Where Are the Weak Points?
How Can You Prevent It?

EVERY day the radio brings to our ears fresh evidence of organized alien efforts to stem the tide of preparedness for defense in this country. Only a few weeks ago, one radio newscaster was subpoenaed before a Federal Grand Jury in New Jersey to present the evidence he possessed of planned sabotage in New Jersey munitions plants, and since then we have read of numerous explosions in plants working on defense orders. Thus, we learn more and more of the subversive activity of the propaganda machines of the Axis nations, using crushing news to break the morale of small nations before unleashing their air and land forces. What morale-shattering news it would be to this great country to learn that the water supplies of many large and small communities had been rendered useless by dynamiting, poisoning or loss of power! What a shock it would be to the self-sufficient complacent isolationists who believe "it can't happen here."

The Navy, Army, and Air corps carry the responsibility for defending this nation against attack by a foreign power approaching our boundaries, the FBI must checkmate the Fifth Columnist, but the city must prevent the saboteur from depriving its citizens and industries of an adequate safe water supply.

Why Sabotage?

Most industries are dependent on an adequate safe water supply for many of their processes. To deprive a plant manufacturing defense equipment for this country or Britain of its water supply would mean delays and a possible closing-down of the plant. This would be very satisfying to foreign dictator powers, since delay in production of armament for the democracies is to the advantage of the dictators.

The reasons for sabotage by man come under four heads:

1. Desire to damage an industry manufacturing war supplies for Great Britain.
2. Desire to damage an industry manufacturing materials which are made into war supplies for Great Britain.
3. Desire to prevent the manufacture of materials and munitions strictly for defense purposes.
4. Desire to cause trouble or inconvenience to those who differ in policy or to get even politically.

Sabotage Defense

It is the responsibility of the city water utility alone to prevent any failure in the water supply for domestic, industrial and fire-fighting service. Defense against acts of sabotage must be "before the horse is stolen" through preventive measures carefully planned and executed promptly.

Who May Attempt It?

We must not lose sight of the fact that the foreign agent is not the only saboteur. We have the disgruntled, discharged employee, who may feel that at times such as this he can commit an overt act against his former municipal employer and the damage will be blamed on a foreign agent. Then there is the fanatic, or crank, who always takes times of unusual excitement to work off a grudge. Just now we have those whose feelings run high and who believe we should stand alone, the one nation free of all turmoil of military preparedness for ourselves, or assistance to any warring nation. This form of fanaticism sometimes leads to acts aimed to prevent such preparedness and assistance. Then, Nature is always with us and many times against us. The most devastating sabotage of recent years was the now historic hurricane of September 21, 1938, which took such a heavy toll of water-works plants in New England. Tornadoes, hurricanes, floods, are all unpredictable acts of nature which sabotage the usefulness of our most essential industry.

Where are the Weak Points?

The vulnerable points in a municipal or industrial water supply include:

1. Machinery not easily replaced
2. Gate-houses and dams
3. Isolated river crossings or pipe lines over bridges
4. Electric power lines
5. Isolated automatic pumping stations
6. All pumps
7. Ungated intersections in the center of high-value areas
8. Distribution reservoirs where no secondary chlorination is available, and where cultures of pathogenic bacteria might be introduced.

Remember, a very small thing may cause great damage. Gen. Hugh Johnson reported that chicken wire was found capable of disabling tanks. A bit of ground

pumice may put an important bearing in a pump out of service.

How Can You Prevent Sabotage?

Every municipal official and water department must realize that protection against the possibilities of sabotage will cost money. Steps to strengthen your water supply against damage cannot be taken without the expenditure of a great deal of thought, work and cash.

Internal organization is the first step in successful preparedness. All employees should be fingerprinted as a precaution. We feel that universal fingerprinting of the entire population would be of great benefit, but since that is not generally practiced, we feel that all those employed in water service who are entrusted with responsibilities, large or small, in such crucial times as these should be fingerprinted for identification. It will be recalled that recently a considerable number of employees of an industrial plant disappeared when it was announced that all employees would be fingerprinted. The natural inference is that these men could not be trusted if working in that particular plant. Fingerprinting and a careful examination of every employee of the water department will make it possible to eliminate those of doubtful national loyalty and will aid in developing a spirit of unity. All utilities must cooperate in watching for suspicious acts, or persons. Assign the most trustworthy man in your department to take charge of defense and emergency protection, and keep him free for this work. It is a full-time job.

In order to insure the most effective cooperation between all city departments, a joint conference should be held with the fire, police, street and sewer departments, and invitations extended to those responsible for the operation of electric, gas, telephone, street-car and other services. A defense council of operating personnel from each of these utilities should meet at frequent intervals to discuss methods of cooperation and unity of action in time of need. Every effort must be made to exclude partisan politics and feelings in these activities which are solely for the benefit of the entire community.

After you have established your internal organization and cooperation with other departments, a complete plan of protection of all parts of the water system must be carefully worked out and carried into effect. This is the external part of the program. Probably the first step in the external protection program is to exclude visitors from pumping stations, treatment plants, and the areas about impounding reservoirs and dams and distribution reservoirs. This will entail a large program of protective fencing of the burglar-proof type sufficiently distant from vital points to prevent easy hurling of packages containing time or detonating bombs at these structures. Adequate floodlighting of all important structures will reduce the number of guards necessary for the patrolling of fences and buildings. A careful system of checks should be instituted through the use of watchman's boxes to be certain that all parts of the plant are visited regularly to insure the integrity of fences and operating equipment.

Gate-boxes and valves controlling supply mains should be concealed so that the saboteur cannot locate them readily, but sufficient data on the location of covered boxes must be available to employees of the water department to enable them to locate the valve quickly and operate it, should that be necessary. The installation of four valves at all street intersections becomes an absolute necessity in times when a water-supply distribution system may be damaged by the bomb of a saboteur or airplane. Such protection should be a part of distribution-system construction at all times, and its importance is greatly heightened in time of distress. Further, important valves should be equipped with electric or other power operating mechanisms, preferably with remote control so that a line may be shut off when a valve is made inaccessible by falling structures in the vicinity.

Think through all the emergencies which might occur, and then plan your action under all these conditions. Such preparedness planning is a most important part of every defense program for a utility. What spare parts are most vital to the operation of your pumps, engines, chlorinating equipment, and other mechanical units? Plan to lay in a reasonable stock of parts, and place your orders immediately, as already many industrial plants are working day and night on war orders, and your order may take months to fill. Plan to have available stand-by power in case the local source of electric power on which you depend for the operation of your pumps, dry-feed machines and power-operated valves is damaged. Some plants have already installed large diesel units with electric generators to furnish adequate stand-by power, or individual gasoline-engine-powered units. By "adequate" we mean of sufficient size to furnish sufficient water to your industries and to your fire department as well as to the consumers who depend, for manufacturing, fire protection, and life itself, on the local water supply. An emergency stock of pipe which can be laid easily and quickly to replace damaged lines is particularly desirable for use where river crossings might be wiped out, or where large fills in which pipe is carried might be mined and both fill and pipe destroyed.

Probably the best information on which to base judgment on matters of preparedness will be found in those countries now at war with which we still have reasonably free communication. Norman J. Howard, President of the American Water Works Association, who is in charge of the Toronto, Canada, filtration plant, reported at the New England Water Works Association that all utilities in Canada were warned of a plot to seriously damage them at the time of the Munich conference. Some steps were taken, but since the conference ended in appeasement nothing was done until the start of war in September, 1939. Then an army of guards was employed and fences and floodlighting were installed. In the first six months, the wages for guards

Organize Now!

Local defense committees composed of active, keen-minded representatives of all types of utilities can coordinate activities to increase their effectiveness and economy.

amounted to some $180,000, which was altogether too great a burden for Toronto to carry. Since practically all suspected persons were lodged in concentration camps, the guards were greatly reduced in number, and the fences and floodlighting installed at a cost of but $2,000 have been found effective.

Reports from Great Britain indicate that some difficulty was experienced by water departments in securing emergency equipment early in the war, since it was difficult to persuade authorities of the need for it. One of the features of the protection of the London water supply was the tremendous increase in the number of valves in the distribution system to permit cutting out damaged sections and still be able to furnish water supply in adjacent blocks for domestic purposes as well as for the fire fighters combating incendiary bombs. The city of London was divided into numerous defense sections, and the plans of the distribution system showing the location of valves have been stored in the different sections for convenience. Thus, decentralization aids the defensive operation of the water system. Steps have been taken throughout Great Britain to make cross-connections between adjacent city supplies, so that if one plant is completely destroyed, water can be supplied from an adjacent city temporarily. The national authorities in Great Britain ordered every water supply to install additional chlorine equipment so that the supplies could be made bacteriologically safe at all times even though filtration plants might be damaged.

The Ministry of Health of Great Britain recently issued a circular to water utilities stating:

"It will be obvious that the damage which is at present being caused in varying degree to water mains emphasizes the need for taking all possible precautions during repairs against the risk of pollution of the supply.

"As water undertakers are well aware, the occurrence at the same time of a fracture in a water main and in a sewer in close proximity or in the same crater does not in itself (save in very exceptional circumstances due to the unusual layout of the undertaking) constitute an immediate and direct danger to the water supply. . . ."

The circular points out that the repaired section of a main should be thoroughly washed out to waste and sterilized before the supply is connected up again to deliver water to consumers, and that similarly any new lengths of pipe used in the repair should also be sterilized. This is a routine precaution in normal practice, but the Minister of Health points out that his inspectors have reported instances where it was being carried out "in what seemed to be a somewhat perfunctory manner. It should invariably be adopted in all cases of fractured water mains even if there is no apparent risk of pollution. . . ."

Great Britain reports that it considers earth dams as especially vulnerable to air attack but that stone masonry dams are not easily destroyed by bombing from the air or from the ground. Breaks in earth dams have been filled with sand bags and rafts to plug breaks which have extended below the flow line.

Unified Action

As organization for preparedness to defend water supplies against possible sabotage progresses, our State Health Departments will undoubtedly become the leaders for the exchange of organization data and standardization of measures to unify action in case of trouble. The Chemical Warfare Service of the United States Army has been working for some time in preparing information on the effect of poisonous gases on water supplies and will be prepared to furnish information to water supplies throughout the United States in event of any possibility of an aerial attack on this country. Reports show that mustard gas, for instance, hydrolyzes in about two days when quantities are dropped into an open reservoir. The use of chlorine corrects the damage done to the water and at the same time is a protection against bacterial pollution, intentional or otherwise.

The steps to be taken to protect a water works against sabotage are mostly an extension of ordinary maintenance precautions, a heightening of preparedness against ordinary breakdowns which might be disastrously induced by the evil intent of a foreign agent, a fanatic for complete disarmament, or the destructive whims of wind and weather at a time of great need for adequate water service. Every plant is a separate problem. Study your own plant, consult with your local industrial leaders, and seek advice on specific protective problems from the nearest of the 52 Federal Bureau of Investigation local offices.

It Can Happen Here!

Don't fail to heed warning! Use your head and you won't require too much cash adequately to protect your plant. Think and act now!

History moves so fast these days that the time between the preparation of this discussion and its reaching you may be the span between peace and war. You must be prepared for any eventuality even before information as to the courses of action against pollution by cultures of disease bacteria, or the use of poison in a water supply, is released by Federal authorities. Think and act now.

To Regulate Neon Signs

In a Pamphlet Just Issued, The City Club of New York calls attention to the traffic hazard created by red and green neon advertising signs. It urges a local law prohibiting new illuminated signs which contain red or green colors located less than 35 feet above the level of the street and providing that existing signs containing these colors shall come under the provisions of the proposed law with change of ownership.

Commenting on this pamphlet *The New York Times* says editorially, in its issue of November 29, 1940:

Drivers are only too familiar with the confusion which results from colored illuminated signs so placed that they form a background for traffic control signals. There are scores of intersections in the city where it is almost impossible to pick out the signal against the crazy quilt of slogans and messages in front of and behind it. A like condition is found in cities and villages in most states. The hazard is aggravated when the colored signals at low level are of a flashing type. Many a motorist has risked a bump from a following car by slamming on his brakes at a sudden red flash ahead, only to find to his embarrassment that it was an advertising sign and not a traffic light. Many another, at a similar flash of green, has placed himself and other drivers in a still more hazardous position by starting up before the control signal actually has changed. The tired driver who wears glasses at the wheel falls prey most easily to these illusions. The City Club's proposal should act as a stimulus for widespread study of a real traffic danger.

Laboratory Tests as an Aid to City Purchasing

FOR years a certain city hospital burned about 14,000 tons of coal a year. Recently the city started buying coal on specification—so many B.t.u., so much ash, such and such volatility—having tests made of every consignment. During the next year the hospital burned 7,000 tons. This may be an extreme case. All the saving may not be the result of using better coal, but certainly it was due to having a system.

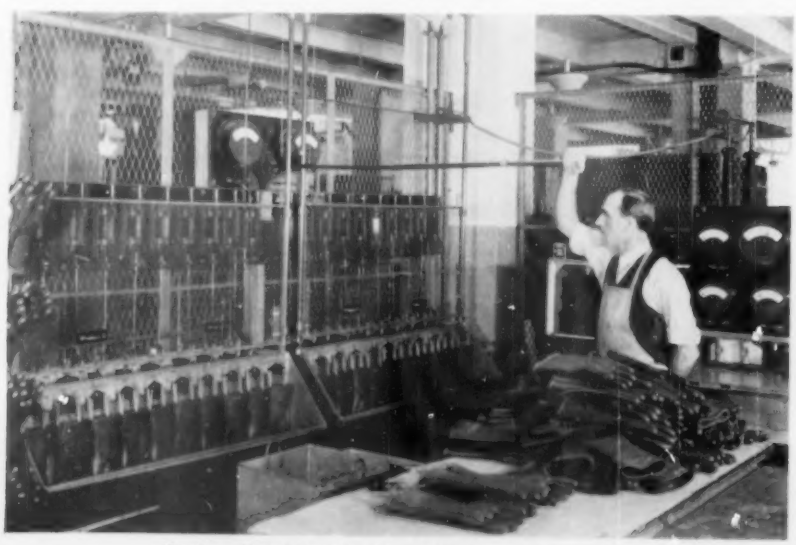
This same city has 107 agencies which use paper. At one time they were buying 27 brands of carbon paper. Questionnaires as to what was wanted, and tests of all the papers, reduced the list to seven manufacturers. The result has been not only a saving in money, but a more uniformly satisfactory quality of carbon paper.

Striving Toward Tests

A general municipal testing laboratory sounds good; but there isn't any. The larger cities have laboratories of one kind or another, some of which make miscellaneous tests in addition to their specific function. The Newark, N. J., Police Department laboratory, for instance, runs coal tests because Chemist Reuben Warner happens to be a specialist in that field. Newark's coal bill is $180,000 per year. If the specification calls for coal containing 13,000 B.t.u., and coal containing 10,000 B.t.u. is supplied, the city knows it and receives a rebate of 23 per cent. On the entire consumption this would amount to $51,400—well worth the cost of the tests. The tests are of daily occurrence, as deliveries are made to the various major consuming agencies. A sample is taken from every truckload of coal. If the police laboratory were not able to do this work, an independent commercial laboratory would be retained.

Any city receiving a delivery of 300 tons of coal or more would find it advantageous to have it tested. It is well worth 0.37 per cent of the cost of the coal (or the price of a ton) to know that the right quality is coming in—or that it is not.

Commodity testing started in earnest with the inauguration of the central purchasing system. This system is usually as effective as the city governing body allows it to be. Moreover, even where the purchasing agent is given full power, his results are efficient and constructive only in proportion to his intelligence. The system is not foolproof.



Testing Electricians' Rubber Gloves for 10,000 Volts

Quite a number of central purchasing agents have started out with the intention of reducing everything to formulas. Specifications were to be the cure-all. All that is necessary is to find exactly the thing you want to buy; then take it apart and measure all the parts, describe them, and call for bids on the object thus described. The lowest responsible bidder gets the job of building and furnishing this object in any quantity requested. If the original object happens to be the product of some manufacturer who spent years and money to develop it, that makes no difference; just describe it in detail and ask for bids on it. This method worked all right with washing powders and cleaning compounds, which are more or less simple mixtures. But in buying machinery or equipment the matter is more intricate because the manufacturers whose design may be pirated is usually better tooled to meet the specifications than other manufacturers.

Be Sure You Get What You Specify

One of the difficulties of buying intelligently on specifications is that the specifications tend to be canned. A few cities develop specifications based on what they actually want. Other cities borrow these specifications and either use them as they are or have them revised by the man or men who are the closest to experts in the city service.

Another difficulty is in determining whether or not the specifications have actually been met. It may be difficult to determine this. In most instances the facilities are lacking. To demand a certain thing and not make certain it has been furnished is demoralizing to both purchaser and vendor. Yet there are many commodities which require laboratory testing, and many others which if systematically tested would pay dividends

Testing lamps pays dividends to cities

Above, testing for economy in use; left, searching for mechanical defects

to the city and taxpayers.

Do You Test Lamps?

Some cities buy incandescent lamps on price; probably as many more buy them on the name of the manufacturer. A few cities do a little in the way of testing incandescent lamps. Generally, however, they lack adequate laboratory facilities for this purpose. Yet their purchases run into many thousands of lamps annually, and the stake in the performance of these lamps is large. When buying on k n reputation and reliability, it is probable that only in the case of exceptionally large purchases will testing return much of value to municipalities. However, not infrequently, city purchasing is hampered by regulations or traditions or circumstances which appear to control placement of orders with the low bidder. In such cases testing of independent and reliable character offers protection of the interests of the taxpayers which otherwise may be lacking.

Electric utilities, for instance, purchasing 40,000,000 lamps annually, have continual tests made by Electrical Testing Laboratories. These tests cover (1) physical condition, (2) initial rating, (3) life performance. There are 102 points of possible physical defect in a lamp, some impairing appearance and others performance. The rating is measured by the watt consumption or input, the lumen output, and the efficiency.

Initial Price Smallest Cost

A 60-watt lamp costing, say, 13 cents at retail, during 1,000 hours consumes 60 kwh. which at 4½ cents costs $2.70. One per cent difference in light-producing efficiency — invisible to the eye — increases or decreases the life of the lamp by 7 per cent. Even a 10 per cent difference may pass unnoticed; yet it halves or doubles the life of the lamp. One brand of "60-watt" lamp, for example, was found by E.T.L. to be so wasteful that it should have been given free with a $4 bonus to compensate for the additional cost of electrical energy required to produce the normal amount of light during the life of the lamp.

Use More Tests

These facts suggest that much more advantage should be taken of testing laboratories. Where necessary, inspectors and testers will be sent to distant cities. Frequently the commodities, materials, samples, can be shipped to the laboratory headquarters.

A service of this excellence and standing can be of great aid to purchasing agents, city managers, mayors and councilmen. Expert, trustworthy, disinterested information on commodities and their makers becomes available to municipal officials responsible for selecting and purchasing products of many kinds. The use of such a service grows with use. It may well supply what is now the principal deficiency in municipal purchasing — factual knowledge of products in advance of purchase, upon delivery, and in use or operation.

Expert Pavement Patching

Hartford, Conn., Awards Annual Contracts—Methods Set Example for Many City Departments

By THEODORE REED KENDALL
Engineering Editor, THE AMERICAN CITY

THE complete organization for patching sheet asphalt pavements in Hartford by contract, and the methods employed, are usable by any city operating its own maintenance department, and because of their efficiency are valuable for all.

The Maintenance Contract

Each year the Street Department of Hartford determines the approximate amount of asphalt maintenance which will be required in the coming fiscal year, and asks for an appropriation to cover this, based on a reasonable charge per square yard of pavement removed and replaced and for material for filling cracks. Then proposals are invited, and the contract is awarded on a square-yard-and-material basis to the lowest responsible bidder. Patching is paid for per square yard. Cracks, which require cleaning and filling, are paid for on a time basis, plus the amount of asphalt filler required.

A city inspector covers all streets and determines which require patching first. These are approved by the Superintendent of Streets, who then authorizes the expenditure of a definite sum for patching. The city inspector then marks out with yellow chalk the areas to be removed and replaced, and the cracks which are to be cleaned and filled.

Convenience and Safety

Too frequently patching is done in a haphazard manner without much thought for the convenience and safety of the public and the workmen. In Hartford, when an area is designated for patching, the present contractor, Edw. Balf Co., of Hartford, sets up a dummy caution standard at either end of the work, with red flags on angle-iron standards every 10 or 15 feet along the work to prevent traffic from entering. In addition, the city provides a traffic policeman who helps expedite the moving of equipment and material trucks, and getting the public past the area with the least delay.

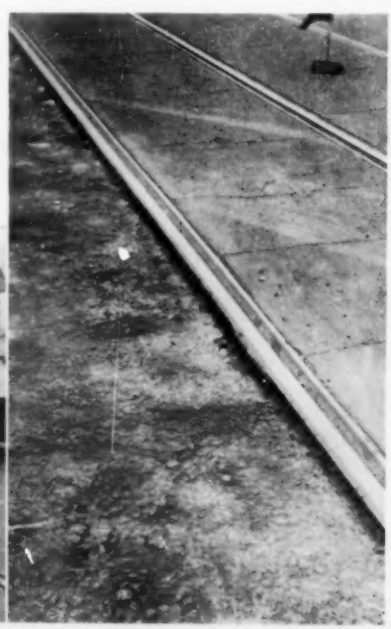
As a further aid to traffic, since patching one side of a street naturally reduces the available traffic lanes on the street, "No Parking" signs are set on opposite side of the street for the full length of the job, so that the blocking of traffic will be reduced to a minimum.

Cutting and Cleaning

The contractor uses an Ingersoll-Rand compressor mounted on a Chevrolet truck with two I-R pavement breakers attached. The foreman in charge reports that a crew of 23 men used to be able to cut 200 square yards of pavement out per day, but by using pavement breakers, they can now get out 600 square yards in the same time with the same number of men. In this outfit the pavement breakers are hung up on brackets on the back of the truck when not in use and while the truck is still on the job. When being transported back to the yard, they are placed in the tool-box.

On break-up, the contractor uses seventeen men to cut out the asphalt, making the initial break with pavement breakers, following with picks and shovels to clean out the material. The cutting of the edges is done with hand cutters to secure

Cleaning Out the Old Broken Pavement, and a Close-up of the Rails, Showing the Thoroughness of the Work



Raking and Tamping the Sheet Asphalt Patches Preparatory to Rolling, and the Special Hauck Fire Wagon. Note the Use of Planks at the Edges of the Patches Where the Roller Is Compacting Binder

a smooth, vertical face. Special care is taken to cut out all the asphalt under the heads of the streetcar rails, leaving a wedge 3 inches deep, which can be packed under the head of the rail when the surface course is applied. This prevents the surface material from lifting at the edge of the rail and leaves a neat, permanent job.

In cleaning out the holes, stiff brooms are used to sweep the concrete base clean, and soft brooms are used on the surface of the pavement to remove material which has scattered onto the existing pavement.

Where cracks in the asphalt run through the sheet, binder and concrete base, they are cleaned out carefully down through the concrete by sweeping with a fine broom after the material has been loosened, and are then filled with asphalt to waterproof them permanently so that no further moisture can come up into the pavement through the breaks.

Binder and Top

The depth of binder used runs from 1 to 4 inches, but always it is carried so as to leave space for 1½ inches of the sheet asphalt wearing surface. When the binder has been placed and is ready for rolling, the contractor always places planks along the edges over which the roller will run, to protect them against breaking from the weight of the 10-ton tandem Buffalo-Springfield roller. After the rolling is completed, the break between the depression where the plank was located and where the roller left the plank is hand-tamped to give a uniform surface. If any of the edges have broken during rolling, they are hand-trimmed with an asphalt cutter and are then painted with the other edges, as well as around all castings and along the curb at the gutter.

In placing the binder course, the crew consists of four men shoveling the binder material into place, three raking it uniformly over the concrete base, two men hand-tamping, two smoothing joints, using heated irons, when surface is being placed, and a broom man who cleans around the edges of the cuts and, when binder is being placed, puts the lumber at the edges when rolling starts.

A fire-wagon is used for heating the tools, and it is equipped with three outlets for Hauck oil burners. It has a small asphalt tank on the top which contains sufficient asphalt for a day's work in painting the edges of cuts and for filling cracks. Only the two outside burners are used for heating the tools, the middle one being kept for a special use. On new work where sheet asphalt is being laid, at the end of a morning's work or of a full day, a 1½-inch rope is laid against the vertical edge of the surface course to hold it up instead of feathering it out as is done in so many cities. When the material is feathered out, it must always be cut back to a vertical face at full depth in the morning, and this material must be thrown away. By the use of the 1½-inch rope only a minimum amount of material must be cut to secure the vertical face, and then this contractor uses the third, or middle, tap on the fire-wagon to furnish fuel for a hand-operated burner with which he thoroughly heats the face and about 6 inches of the pavement laid on the previous runs, so that the joint when rolled is very difficult to locate. Also on new work, the vertical face is not painted for the full depth, but only to within ¼-inch of the surface, so there is no bleeding of the asphalt paint out on the sur-

(Continued on page 61)

Frank F. Farrell, Foreman for Edw. Balf Co. and Officer 269 Assigned to Traffic Duty Where Street Patching Is in Progress

Large Trickling Filter Plant with Sludge Digestion

New Sewage-Treatment Plant at Des Moines, Iowa, Designed for Best Results at Low Operation Costs

AFTER considering all factors of construction and operating costs, the city of Des Moines designed and built a sewage-treatment plant at the east end of the city, with screening, primary settling, trickling filters, secondary settling, and sludge digestion units. This combination of treatment methods was chosen because it gives the lowest operating costs, but with construction costs about the same as for activated sludge, and combined the use of Federal relief labor with the construction of some portions of the plant by contract.

Sewage for a population of 150,000 people and packing-house wastes for an equivalent of 45,000 is received at the plant through a 6-foot 6-inch x 7-foot monolithic concrete sewer having a capacity of 66 mgd. The flow is by gravity, except that four outlying districts are each equipped with three low-lift pumps to deliver the sewage over divides to the main sewer. The plant is located on a 57-acre plat adjacent to the Des Moines River and has a capacity of 40 mgd, which is above the present requirements of the city. A 20-mgd rate is to be maintained to secure maximum efficiency from the trickling filters by returning the required amount of filter effluent and secondary settling tank sludge to maintain a uniform flow through the plant in accordance with the recommendations of the Iowa Department of Health. A storm overflow at the main pump-house permits all flows greater than 40 mgd to go direct to the river after screening and grit removal; or, in case of high river water, the excess can be by-passed around the pumps at the plant. The storm-water overflow tank drains back to the wet well in the pump-house and can be flushed out with water from a city hydrant while draining.

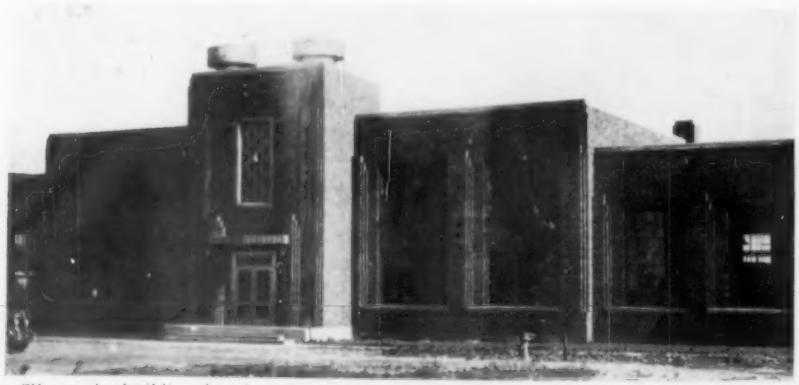
The Pump-House

The main pump-house is built of red hackberry finish brick with steel sash and steel screen frames for the windows and with concrete floors throughout. It houses the low-lift pumps, sewage screens, grit remover, and a three-car garage at the east end. Unusual care has been taken in the design and equipment of the building to insure adequate ventilation to prevent any damage from explosions of sewer gas, which, with the ventilating system installed, cannot become pocketed in any part of the building. Around the pumps and pump suctions is Blaw-Knox steel grating, permitting ready ventilation, as well as easy access to the lower floor for repairs through the use of an overhead chain and falls for removal of sections of air grating. Transite ventilating pipe is installed in the basement of the pump-house, using maximum 30-inch pipe, slotted for the intake of air.

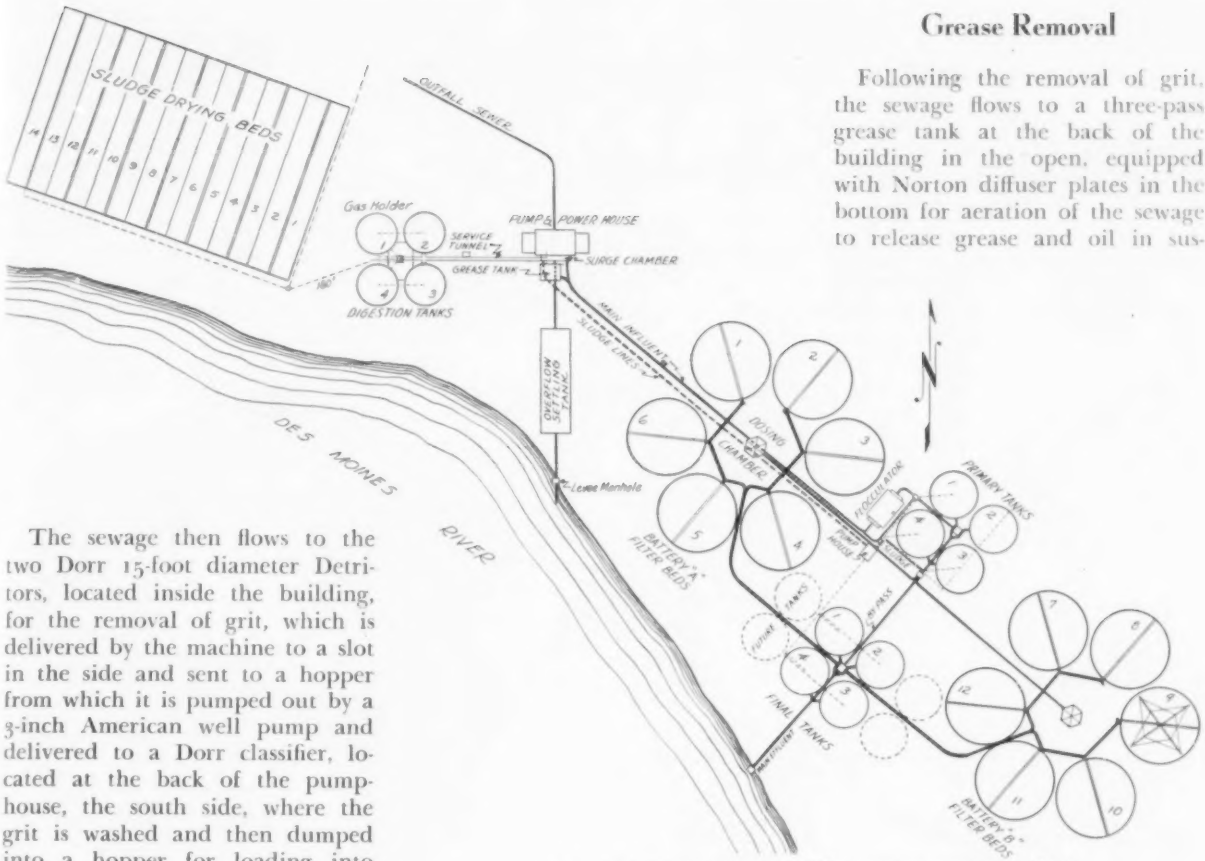
At the west end of the building on the first floor are the Westinghouse transformers, which convert the 13,800-volt primary current to 440 volts for use at the pump motors. In the same room is an American Gas Products boiler for heating the building, using digester gas for fuel and a Transite flue pipe to carry the waste gases to the chimney. Hot water is used for heating the building, being pumped through the circuit of Carrier unit heaters by duplicate Fairbanks-Morse motors and 2-inch F-M pumps. The gas boiler, as well as all other units burning gas within the entire plant, is equipped with an Emco gas meter and PFT flame traps.

On the second floor are a well-equipped laboratory and the superintendent's office, all equipped with a high grade of steel furniture, and a small machine shop. Adequate locker space and toilet and shower-bath facilities are provided for the workmen.

The sewage, on arriving at the pump-house, passes through a bar screen with 6-inch openings and then flows to two mechanically cleaned Rex bar screens with 1-inch clear openings, the screenings being delivered to a Rex Triturator. The Rex automatic screen is started and stopped by the difference in sewage level on the two sides of the screen. The ground-up screenings are returned to the sewage stream.



The main building housing the pumps, controls and laboratory for the Des Moines, Iowa, sewage-treatment plant



General layout of the Des Moines sewage-treatment plant

The sewage then flows to the two Dorr 15-foot diameter Detritors, located inside the building, for the removal of grit, which is delivered by the machine to a slot in the side and sent to a hopper from which it is pumped out by a 3-inch American well pump and delivered to a Dorr classifier, located at the back of the pumphouse, the south side, where the grit is washed and then dumped into a hopper for loading into trucks for use in walks and fills.

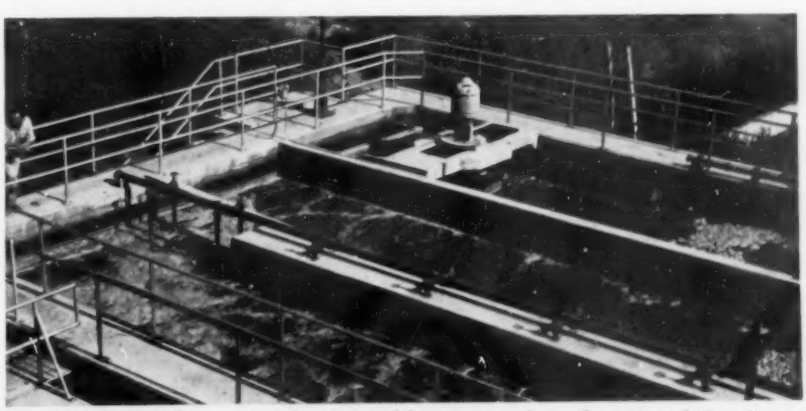
The low-lift pumps are in a dry well immediately adjacent to the wet pit, so that they are automatically primed. The four Worthington vertical centrifugal pumps operate with a static lift of 31 feet, and each has a Simplex venturi meter with Simplex air-drive recorder and totalizer. In addition to the four recording meters for the pumps, there is one Simplex recording meter for the returned effluent and sludge from the final tanks used for building up the flow, and another similar meter gives the total of the four pumps and the return flow; still another meter records the total of the four pumps and the return flow, and a fixed meter deducts the flow of the returned effluent to show the net flow into the plant.

The pumps are: one 16-inch pump of 7.5 mgd capacity driven by a 75-hp Westinghouse motor; one 16-inch pump of 10 mgd capacity with a 100-hp Westinghouse motor; one 20-inch pump of 12.5 mgd capacity with a 125-hp General Electric motor; and one 20-inch pump of 20 mgd capacity with a 150-hp General Electric motor.

The pumps are equipped with Iowa check- and gate-valves to isolate each pump. On the pump floor is a Penberthy sump pump to take care of leakage and infiltration. The pumps are all controlled from a Westinghouse switch gear in the transformer room at the west end of the main pumphouse and administration building.

Grease Removal

Following the removal of grit, the sewage flows to a three-pass grease tank at the back of the building in the open, equipped with Norton diffuser plates in the bottom for aeration of the sewage to release grease and oil in suspension or emulsion. The tank has a 15-foot water depth and a detention period of only 10 minutes. Air is supplied by a Sullivan 350-cfm air compressor in the transformer room at the west end of the building. Air is used at the rate of 0.025-cubic foot of air per gallon of sewage flow. At the end of the grease-removal tanks is an American Well Works grease flotation unit, which skims the grease



In this tank aeration removes large quantities of grease from the sewage before it goes to the filters

from the surface of the sewage.

Primary Treatment

The degreased sewage flows to a Dorr flocculator where, during its 30-minute detention period, the flocculator paddles aid in effecting a coagulation of the sewage to permit better settling in the four 90-foot diameter primary settling tanks. The flow from the flocculator is divided by a control chamber in the middle of the group of primary tanks. These tanks have an 11-foot side water depth, and the sewage is delivered by a center feed, then flowing radially to the circumferential weirs. The detention period in the primary settling tanks is 2½ hours. The sludge settling out during this period is removed by Link-Belt Circuline clarifiers. These tanks are located just east of the pump-house.

One of the two batteries of six 152-foot diameter rotary distributor trickling filters, and a close-up of the six-way dosing tank

Trickling Filters

The effluent from the primary settling tanks flows to a "splitter box" which divides the flow evenly between the east and west batteries of six trickling filters each. These filters are each 152 feet in diameter, have 7 feet of 1½ to 3-inch stone, and concrete underdrains covered with a precast concrete bar grillage. A central dosing chamber in the middle of each group of filters contains six compartments, one for controlling the flow for each filter. The sewage is distributed uniformly over the surface of the filters by four-arm PFT revolving distributors.

Final Settling Tanks

The nitrified effluent of the trickling filters flows to a control chamber in the middle of the four 90-foot diameter final settling tanks, which have a 9-foot side water depth and are equipped with Link-Belt Circuline sludge-removal mechanisms. The final effluent from these tanks flows through a 6½ x 7-foot concrete flume to the Des Moines River, where it is disposed of by dilution.

Sludge Digestion

The primary settling tanks or clarifiers have 6-inch sludge lines with gravity flow to the sludge pump-house, and the final tanks are similarly eqiupped for gravity flow with 12-inch pipes. The final tank sludge is delivered either to the digester or to the raw sewage. The sludge pump-house is located immediately south of the primary settling tanks, and contains three PFT-Marlow sludge pumps so arranged with seventeen valves that they may pump from any combination of primary tanks to the four digestion tanks. A novelty of the pump-house is a small sump in the concrete floor, about 2 feet square and 20 inches deep, with a suction line of 4-inch pipe connecting with the common suction line of the three sludge pumps. This sump acts as a drain for the pump-house in case it is necessary to wash it down; and also if there is any difficulty at any time with the digestion tanks and it is necessary to add lime to them, the lime can be placed in this sump and delivered to the digestion tanks with the fresh sludge, giving adequate mixing in the long line between the sludge pump-house and the digesters.

On the ground floor of the sludge pump-house is a Westinghouse control panel for the pumps and a toilet for the men working in that section of the plant. In the basement with the sludge pumps is a large hand-operated valve on the return sludge line from the final tanks. It is at this point that the volume of return sludge is controlled.

Sludge-Digestion Tanks

The sludge digester control house, in the center of the four 80-foot diameter by 27-foot side water

(*Continued on page 79*)

Santa Claus Lives in Portland, Oregon

Address the Fire Department

By BATTALION CHIEF EDWARD L. BOATRIGHT
Executive Director, Fire College, Portland, Ore.

WE HAVE a Toy and Joy Makers organization, composed of all members of the Portland Fire Department, whose Christmas hobby is to bring cheer and happiness to unfortunate children whom Santa Claus himself might overlook.

It was in October, 1914, my first year in the Fire Department, that a youngster asked aid in repairing an old wagon, so that he could give it to his brother for Christmas. We all pitched in and repaired it.

The boy told his schoolmates what the firemen had done.

Long before the boy's brother could be surprised, the firemen at the station were astonished. For the following Saturday some 30 boys in the neighborhood brought toys needing mending.

In 1926, a group of firemen from the different stations decided to form a city-wide organization to aid unfortunate and needy children of the city. We named ourselves TOY AND JOY MAKERS. Now every fire station in the city does its share in assembling, repairing and rehabilitating broken toys.

You may wonder how we obtain supplies. Long ago, Commissioner Clyde and Superintendent Helber ordered all old baby-buggies, wheels and broken toy-wagons that find their way to the municipal incinerators, to be set aside. Our organization picks them up, and after they are put through a cyanide process, to assure sanitation, they are brought to our plant and used as needed. At Christmas the Toy and Joy Makers deliver to homes more than 100 truckloads of toys.

One fire station specializes on roller skates. Another works on trains and train tracks. Charles Ralph, Superintendent of Fire Alarm Telegraph, and his entire crew supervise the repair work on electrical equipment. Some stations do only carpentry work on the larger toys. They are fully equipped with lathes and saws and all necessary machinery. Some do brazing, welding and general blacksmithing. Others put up portable

Largest Doll-Repair Factory in the World, Operated by Portland, Ore., Firemen

booths for spray painting. One station specializes in fine striping and hand decorating. Another station has five men who repair bicycles, tricycles, kiddie-cars, wheels and seats.

Fire Station No. 3 for a week is the world's largest doll-repair factory. More than 3,000 dolls are rehabilitated under the personal supervision of Assistant Chief James Dillane, Battalion Chief W. L. Robertson, and Jimmy Falconer.

Perhaps the largest skate factory on the Coast is located at Engine Company No. 19, where, under the direction of Captain C. H. Linnville, skates are completely rejuvenated—quite a task, for the skates that find their way here are usually battered and worn.

All the twenty fire stations in the city specialize in general repairing, remodeling and repainting of toys. When the toys have been rehabilitated and refinished, they are returned to the headquarters of the Toy and Joy Makers, where they are wrapped, packed, addressed and sent out to each battalion district headquarters. From there they are delivered to the fire stations in the districts of the various battalion chiefs. The stations arrange for deliveries by grocers, milkmen, mail carriers and firemen off duty and out of uniform.

Names are obtained through the Christmas Bureau maintained by the Portland Community Chest, which surveys every family in Portland. In addition, the various fire stations receive names by anonymous letters, from postmen and from policemen. This part of the work is handled by Fire Marshal Fred Roberts and Battalion Chief Sam Townsend.

It is estimated by the Associated Toy Clubs of America that as a result of this idea, originating in the Portland, Ore., Fire Department, over a million needy children will receive toys.

Power-Plant Fire in Boom Town

As a Result of t[he] Oil Boom in the city of Salem, Ill., its population more than doubled over a period of two years, rendering all its utility facilities inadequate to serve the increased population.

Among other things, it was necessary to double the generating capacity of the electric plant. Before the new equipment could be ordered and installed, the demand for electric service exceeded the capacity of the old equipment. Consequently, the urge to start the new equipment as soon as possible upon installation was very great. The plant was started before the superheater pipes could be insulated, which resulted in a fire that burned the roof off the boiler house. As a result, the city of Salem was without electric service for about eight hours. The Superior Oil Co., next door to the light plant, furnished temporary lighting to permit work in the light plant following the fire, which occurred in the evening.

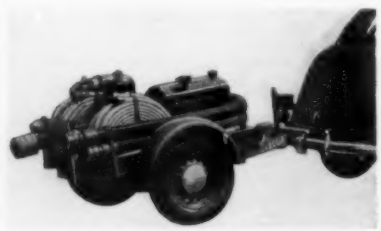
A further consequence of the supreme urge for power, and starting the equipment before it was ready, resulted in wrecking of turbine blading, making it necessary to shut down the new turbine for about two weeks for reblading. During this period the John Fabick Tractor Co. furnished about 200-kw from Caterpillar diesel engines rented to merchants in two square blocks of the downtown section of Salem. All the time, with the exception of the approximate eight-hour shutdown due to the fire, the city of Salem furnished about 800 kw to the city from its old equipment

A. R. White,
Manager, Public Utilities, Salem, Ill.

Fire in boiler house shuts down municipal plant for eight hours

Auto-Hauled Fire Trailer

The LaBour Fire Trailer can be hauled at high speed wherever a passenger car can go. It is compact—8½ x 5-5/6 feet and 4 feet high, weight 1,600 pounds loaded—gives 150 gpm at 100 pounds pressure, and is therefore a real piece of fire-fighting equipment.



The company has a plant in England where the value of this type of equipment has been amply demonstrated. All countries subject to air raids are interested in this fighter, a large American city is studying it, and small places (Harrington, Maine, for instance) find it the answer to economy and need.

The LaBour open-type impeller pump is self-priming and delivers a stream 500 feet and even 1,000 feet from the water source. The engine is a 4-cylinder 4-cycle Hercules. The LaBour two-wheel trailer carries a steel container for 500 feet of 1½-inch hose. There are facilities also for two 12-foot lengths of 3-inch suction hose, two 1½ x ½-inch Chief shut-off nozzles, an axe, spanner wrenches for suction and discharge hose, and a 4½-inch 150-pound pressure gage.

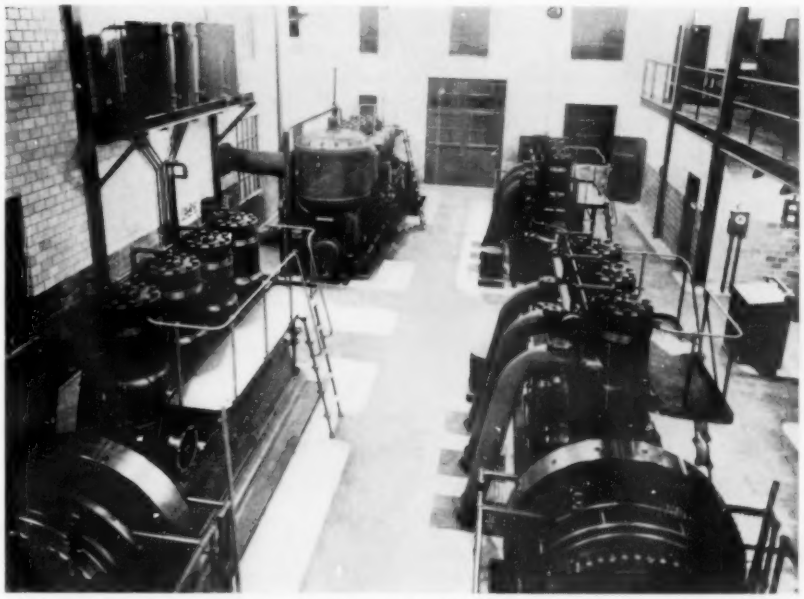
This type of unit is worth getting acquainted with—as a fire fighter, and for the numerous municipal peacetime jobs requiring a portable pump, for pumping out cellars and swimming pools—to name only two standard uses.

City's Diesel Electric Plant Quickly Paying Cost

By Bruce B. Watts
Superintendent, Municipal Utilities,
Corning, Iowa

AFTER several years of litigation with the private power companies, the Corning municipal electric plant started operation in October, 1935. The original capacity was 461 kw, with provision for an additional unit. In 1937 this unit of 700 hp was purchased, but even before it could be installed, the peak load of the plant had reached 480 kilowatts.

A part of the increased load consisted of 126 miles of rural electrification lines connected in the fall of 1937. At present, the plant serves over 200 miles of line consuming 30,000 kwh per month with a 100-kw peak. This current is sold at wholesale at the city limits to a rural cooperative.



The engine room contains two 225-hp, one 300-hp, and one 700- hp Fairbanks-Morse diesel electric unit

The Units

Present generating units comprise three two-cycle, crankcase scavenging, Fairbanks-Morse diesels, two having three cylinders and one four cylinders, and one pump scavenging, two-cycle, four-cylinder Fairbanks-Morse engine. The engines are rated 225, 225, 300, and 700 hp, respectively, and are direct-connected to 2,400-volt alternators with exciters chain-driven from the end of the generator shafts.

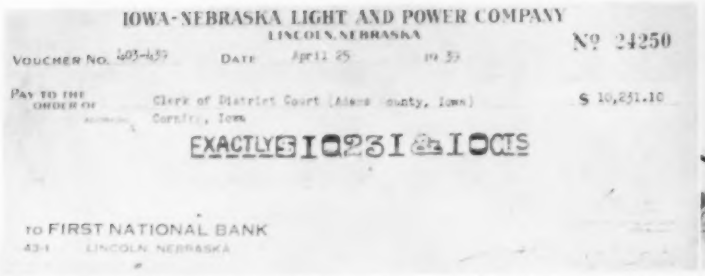
The units are arranged in pairs on either side of a center aisle. The engine exhaust chamber is located at one end of the aisle, and the switchboard at the other with the bus structure on a mezzanine floor. All auxiliary equipment and the workshop are in the basement.

Separate air-intake ducts are provided for each unit, and air filters are located on the outside of the building, with the intake lines under the floor. A concrete intake silencer house was constructed for the 700-hp unit, with the air intake extending above the roof. The exhaust lines are run under the floor to the silencers, which are in the exhaust chambers also outside the building proper. Each engine is equipped with a Woodward isochronous governor. Fuel oil is received in tank cars, with the unloading stand 400 feet from the plant, whence the oil is pumped by a motor-driven transfer pump in the basement to three outside storage tanks. From these tanks, fuel is pumped by a 1-gpm transfer pump through Neptune meters to the separate engine day tanks. Fuel is pumped at this low rate into the day tanks to keep from agitating the oil, thus allowing the settled water and sediment to be drawn off. A fuel-oil meter is provided for each engine.

Lubricating-Oil and Cooling-Water Systems

The lubricating-oil system consists of overhead storage tanks in the engine room for clean oil, with a meter to each engine. Dirty oil from each engine flows by gravity to separate sump tanks in the basement. Dirty oil is reclaimed by a Renuoil Reclaimer, and each engine is credited with the oil recovered from its own sump tank.

The cooling-water system is of the closed type with the heat exchangers located in a steel forced-draft cooling tower above the water line. The soft-water system is equipped with a surge tank and an emergency connection for circulating city water. Soft-water pumps consist of one 200-gpm, one 250-gpm and one 300-gpm, and the raw-water pumps are one 100-gpm, and one 200-gpm. There are also two 4-foot fans on the forced-draft cooling tower. The raw-water pumps are in a concrete pump pit at one end of the cooling tower, thus preventing the pipe friction that would exist if the pumps were in the building. All pumps and fans are controlled from the switchboard in the building. Raw water is regulated by diaphragm valve in the raw-water discharge line which is controlled by a Powers regulator in the soft-water line to the engines. With this system it is possible to maintain constant - temperature water into the engines.



IOWA-NEBRASKA LIGHT AND POWER COMPANY
LINCOLN, NEBRASKA

VOUCHER NO. 403-459 DATE April 25 19 39 No 24250

PAY TO THE ORDER OF Clerk of District Court (Adams County, Iowa) Corning, Iowa $ 10,251.10

EXACTLY $10,231 & 10 CTS

TO FIRST NATIONAL BANK
LINCOLN, NEBRASKA

Delaying the establishment of the Corning, Iowa, municipal plant cost the private utility the amount of the check at left, of which $9,750 was for loss of revenue to the city due to the delay. At right is the Corning, Iowa, plant

The Switchboard

The steel switchboard accommodates four generator circuits, regulator panel, four feeder circuits, blank panel for future, and one panel containing air, water and oil gages, pyrometer, recording thermometer showing temperature of raw and soft water, three-way switches and indicating lights for circulating pumps and fans, alarm system connected to horn; and annunciator indicating low water pressure, high and low fuel-oil level, high exhaust temperature, and circuit-breaker opening. Clocks are mounted on the switchboard for frequency regulation. Circuit-breaker operating levers on the switchboard are connected by bell-crank systems to the oil switches on the mezzanine floor. Bus bars, potential transformers, current transformers, and all high-voltage equipment are in an enclosure on the mezzanine floor. From here the distribution circuits are carried by lead cable underground to a steel distribution tower on rear of lot.

Having four generating units, it is possible to carry the extremely variable load with a running capacity factor well over 70 per cent. Operation in 1939 showed an average of 12.15 kwh per gallon of fuel.

Paid For by 1946

The balance sheet for the year ending March 31, 1940, shows total assets (less depreciation) of $217,536 and an earned surplus of $63,284. In the five years of operation $64,000 in bonds has been paid in addition to over $25,000 in expansion. The entire plant will be paid for in full in 1946.

When the plant had been in operation a little over a year, the city started suit against the private utility which was responsible for the delay in constructing the plant. The result of this suit, carried to the Supreme Court, was a judgment of $9,750 to cover loss of revenue due to the delay.

The plant is under the management of a board of three trustees, one appointed each two years to serve a six-year term. The present trustees are Dr. Fred Binder, R. L. Wheeler, and F. A. Turner. The writer has been Superintendent since the plant started in 1935.

Present residence rates are 6½ cents per kwh for the first 50 kwh, 3 cents for the next 50, 2½ cents for the next 50, and 2 cents for more than 150 kwh per month; minimum $1; 649 meters.

PRINCIPAL EQUIPMENT

Engines . . Fairbanks, Morse & Co., Chicago
Generators . . . . . Fairbanks, Morse & Co.
Governors
Woodward Governor Co., Rockford, Ill.
Silencers Maxim Silencer Co., Hartford, Conn.
Pyrometers, Alnor, Illinois Testing Laboratories, Inc., Chicago
Fuel oil system
Transfer pump . . Fairbanks, Morse & Co.
Meters. Neptune Meter Co., New York City
Storage tanks
Butler Mfg. Co., Kansas City, Mo.
Float alarm switches, Mercoid Corp., Chicago
Lubricating oil system
Filter . . . Diesel Service Co., Ames, Iowa
Meters . . . . . Neptune Meter Co.
Mechanical lubricators, Madison-Kipp Corp., Madison, Wis.
Oil Cooler
Schutte & Koerting Co., Philadelphia
Transfer pump . Fairbanks, Morse & Co.
Lubricating oil
The Texas Co., New York City
Cooling system
Cooling tower Diesel Service Co., Ames, Iowa
Pumps and motors Fairbanks, Morse & Co.
Recording thermometers, Brown Instrument Co., Philadelphia
Pressure alarm switches . . Mercoid Corp.
Air filters, American Air Filter Co., Inc., Louisville, Ky.
Air compressors, Ingersoll-Rand Co., Phillipsburg, N. J.
Pressure indicator, Bachrach Industrial Instrument Co., Pittsburgh, Pa.
Switchboard, Electrical Engineering & Construction Co., Des Moines, Iowa
Switchboard instruments, General Electric Co., Schenectady, N. Y.
Voltage regulator, Allis-Chalmers Mfg. Co., Milwaukee, Wis.

Commercial rates are 6½ cents for the first 100 kwh, 3 cents for the next 100, 2½ cents for the next 200, and 2 cents for over 400 kwh, minimum bill $1.

Power rates for the 39 customers are 5 cents, graduating to 1 cent for over 5,000 kwh.

Off-peak water heating costs the 24 customers 1¼ cents per kwh for the first 100 kwh, and 1 cent for over 100 kwh, with no minimum.

The average billing per kwh is 4.95 cents for residence, 3.49 cents for commercial, 2.93 cents for power, 1.21 cents for water heating, 3.3 cents for street lighting.

NING, IOWA

77 Municipal Plants in Iowa

Lenox and Villisca Are Nearby

The Corning Municipal Electric Plant is one of 77 such plants owned and operated by Iowa Municipalities, generating their own power for distribution to customers.

Nearby plants are Lenox, Villisca, Atlantic, Anita, Greenfield and Winterset.

The list of Iowa cities having city-owned plants is now as follows: Ackley, Akron, Algona, Alta, Ames, Anita, Atlantic, Bancroft, Bellevue, Bloomfield, Cascade, Cedar Falls, Cogpon, Coon Rapids, Corning, Dayton, Denison, Ellsworth, Estherville, Forest City, Glidden, Gowrie, Grand Junction, Greenfield, Harlan, Harpers Ferry, Hartley, Hawarden, Hopkinton, Independence, Indianola, Kimballton, Lake Mills, Lamoni, LaPorte City, Larchwood, Lenox, Manila, Manning, Mapleton, Maquoketa, Milford.

Mt. Pleasant, Muscatine, Neola, New Hampton, New London, Ogden, Onawa, Orange City, Pella, Paullina, Preston, Primghar, Remsen, Renwick, Rockford, Rock Rapids, Seymour, Sibley, Spencer, State Center, Story City, Strawberry Point, Stuart, Sumner, Traer, Villisca, Vinton, Walnut, Waverly, Webster City, West Bend, Whiting, Wilton Junction, Winterset, Whittemore.

Many of these plants have been constructed within the last few years, however, some of them have been in operation for 50 years. Several cities now have plants under construction or in the preliminary stage of construction.

FROM THE ADAMS COUNTY FREE PRESS, OCT. 17, 1940

Excess Condemnation in Law and Practice: I

By H. R. Briggs and Ann R. McGinley

AT THE present time increasing interest is being directed toward excess condemnation. However, the principle that integrated parcels of land are necessary for the economical and harmonious development of a public improvement has long been recognized in this country.

As early as 1812 in New York and 1817 in South Carolina, laws were enacted to authorize the condemnation of properties outside the lines of a street improvement; but the courts generally considered such takings as an unwarranted invasion of private rights and, in most instances, held that this expansion of the power of eminent domain was unconstitutional.

In 1824 in the case of *Dunn v. City of Charleston*, 7 S. C. Harper 189, the Court found the South Carolina act unconstitutional and in 1834 in the *Matter of Albany Street*, 11 N. Y. Wendall 149, the New York Supreme Court declared the New York law of 1812 void. In the case of *Embury v. Conner*, 3 N. Y. 511 (1850), the doctrine of the Albany Street case was reaffirmed. Again in New York in 1863 in the case of *Bennett v. Boyle*, 40 N. Y. Barb. 551, the Court held that in the widening of an avenue in a city the powers and jurisdiction of the commissioners were limited and restrained to the lines of the avenue enlarged.

Action in Massachusetts

Beginning in 1904 in Massachusetts, definite action was begun to enact legislation enabling governmental agencies to acquire properties outside of those essential for the physical location of the improvement. The Massachusetts Remnant Act of 1904 authorized the acquisition of remnants outside the lines of a public improvement when such remnants would by themselves have no economic value.

Three Objectives

In this two-part article, the authors discuss a land-acquisition device which has as yet been too little used by American cities.

The power of excess condemnation has potential value for three public purposes: (1) for replanning areas adjacent to public improvements; (2) for the protection of public buildings from inharmonious encroachments; and (3) for recouping for the public treasury some of the financial benefits which public improvements confer on private property.

The authority conferred by this act was used only in the city of Springfield, where it was employed on five occasions for both new street locations and the widening of existing streets. Since some of the "remnants" exceeded 100 feet in depth, the city apparently used a very liberal interpretation of this term. However, to establish the full nature of the authority granted by this law, the Massachusetts Supreme Court was asked its opinion of the scope of the Remnant Act in a hypothetical question submitted by the Legislature; and in the case of the *Opinion of the Justices*, 204 Mass. 607, 91 N.E. 405, 27 L.R.A. (N.S.) 483 (1910), the Court held that the provisions of the law could not be interpreted so as to permit the taking of any lands other than those which might be classed as remnants.

In 1911 a constitutional amendment was enacted to permit the General Court to authorize excess condemnation of land for public purposes by granting the right to acquire surplus land in connection with street improvements and to sell unneeded properties. The General Court in 1912 granted the city of Worcester, Mass., the right to take excess property in the widening of Belmont Street. The city condemned and took 198,010 square feet of land, about half of which was used for the actual widening of the street, and the remainder was divided into building lots abutting on the new boulevard. In 1915 Massachusetts extended the power to apply to housing projects.

New York, Pennsylvania and Virginia

Almost simultaneously New York and Pennsylvania were experiencing object lessons in the economic loss resulting from confining the acquisition of property for street purposes to the lands within the lines of the improvement. In New York, West Broadway, widened in 1894, Lafayette Street, widened in 1903, and Varick Street, widened in 1913, were examples of uneconomic development where numerous small parcels, unsuited to buildings, remained and were later occupied by billboards and catch-penny devices. Because of the imperative need for removing the restrictions on the acquisition of surplus land laid down by the courts, New York enacted a constitutional amendment in 1912.

The difficulties encountered in developing Fairmount Parkway in Philadelphia were the primary cause for the enactment of the Pennsylvania legislation. A highway was proposed from the City Hall to Fairmount Park which would traverse an area of secondary development. It was decided that the city should have the power to control the property abutting on this parkway to assure the erection of suitable buildings of harmonious architecture along the entire length of the parkway. An enabling law permitting the city to acquire land to a depth of 200 feet adjoining

the parkway, and to sell such properties with suitable restrictions, was enacted in 1907. But in 1913 in the case of *Pennsylvania Mutual Life Ins. Co. v. City of Philadelphia*, 22 Pa. Dist. 195, 242 Pa. 47, 88 A. 904, the Court held that even though the object was to beautify the boulevard, the public could not forcibly take the property of one individual and sell it to another, and that the Pennsylvania law of 1907 was unconstitutional. The result was that in 1933 the principles of the 1907 law were embodied in a constitutional amendment.

One of the most recent cases directly involving this controversial point was that of the *City of Richmond v. Carneal*, 129 Va. 388, 106 S.E. 403 (1921). A new street was opened which cut diagonally across city blocks. The Court held that the taking of the land must be confined to the 80-foot strip needed for the right-of-way, notwithstanding the fact that a state statute existed which authorized the taking of real estate abutting on a proposed street when such property would be injuriously affected unless it were acquired and lot lines readjusted. Virginia, in 1928, therefore amended its constitution and gave the Legislature the right to specify the meaning of "public use." Between 1911 and 1933 several other states enacted constitutional amendments extending the powers of eminent domain; namely, Ohio and Wisconsin in 1912, Rhode Island in 1916, and California and Michigan in 1928.

Economic Principles Involved

Since excess condemnation has been legally authorized in those states having enacted constitutional amendments, it becomes pertinent to consider economic principles which warrant the investment of public funds in so-called surplus or excess lands, and to examine the experience of American cities in the use of this extended power.

While the term "excess condemnation" has a well-established meaning, paradoxically the property desired may be neither "excess" nor acquired by condemnation. Theoretically, the public receives the full benefit from a public improvement only when it receives the complete value from that improvement. This value need not necessarily be a monetary one where the public benefits directly through the resale of properties acquired in connection with the improvement. The investment in surplus lands may be justified because (1) a harmonious and suitable development of adjacent property often enhances the value of a public improvement; (2) contiguous property values are protected and the public is assured of constant or increased values for assessment purposes; (3) costs may be reduced through facilitating trades for needed properties; and (4) the city may acquire title to property instead of paying heavy consequential damages for which it receives no return.

The properties acquired for these objectives are not "excess" in the sense of being surplus or unnecessary. In fact, they have a very decided utility in connection with the development, yet because the parcels so taken may lie outside the established lines of an improvement, they are commonly classed as "excess" lands, and the method of acquiring them referred to as "excess condemnation." This is probably due to the rather strict interpretations the courts have used as to what constitutes "necessary" land.

When additional lands for the above purposes are acquired, normally the governmental agency will obtain them through purchase or donation. Condemnation is resorted to only when other methods have failed. The power of eminent domain is held in reserve by the public for dealing with recalcitrant property owners who would otherwise be able to block a proposed undertaking, and it is not a method generally followed in obtaining additional lands. Condemnation proceedings are notoriously so protracted and costly as to render impractical any wholesale use of this power by a governing body in acquiring only additional land if the necessary areas could be obtained by purchase.

Thus "excess condemnation" has come to mean the practice of acquiring (not necessarily by condemnation) land in excess of that physically needed for an improvement. Authorities differ as to the object of "excess condemnation." Some consider the purpose to be the protection of the improvement or surrounding properties by putting the excess land to its best use—such as landscaping under public control, or sale to individuals with suitable restrictions. This acquisition of land which has a utility in connection with the enterprise but is not essential for it, has been termed "marginal condemnation." Another group believes in securing excess land to obtain for the public certain increases in land value through the resale of the excess land at its enhanced value. This is termed "recoupment condemnation."

Hence, the question as to whether governmental agencies are justified in investing in excess lands must be considered both from the standpoint of marginal acquisition and of recoupment acquisition. This question may be answered to some extent by a review of some of the major developments throughout the United States where excess lands were used or contemplated.

A Milwaukee Example

The most recent undertaking is the Kilbourn Avenue development in Milwaukee, Wis. This project started a new land policy in the city through the creation of a city real estate department in 1922. Before this time Milwaukee County had confined its land acquisitions to properties actually needed for the location of the development.

The present Kilbourn Avenue development in Milwaukee illustrates the utility of excess land acquisition. Twenty years ago increased motor-vehicle transportation facilities began to be essential for downtown Milwaukee. Consequently, plans were drawn for widening Kilbourn Avenue for a distance of 20 blocks from Ninth Street to Lake Michigan. Through this improvement, the extensive boulevard and park development running north and south along Lake Michigan would be directly connected by a 130-foot boulevard with the traffic arteries converging in the downtown area of Milwaukee from the west and also providing ready access to the Milwaukee business section.

Active work on the Kilbourn Avenue development was commenced in 1922. A delay of several years occurred in the operations due to litigation. While all the necessary properties as yet have

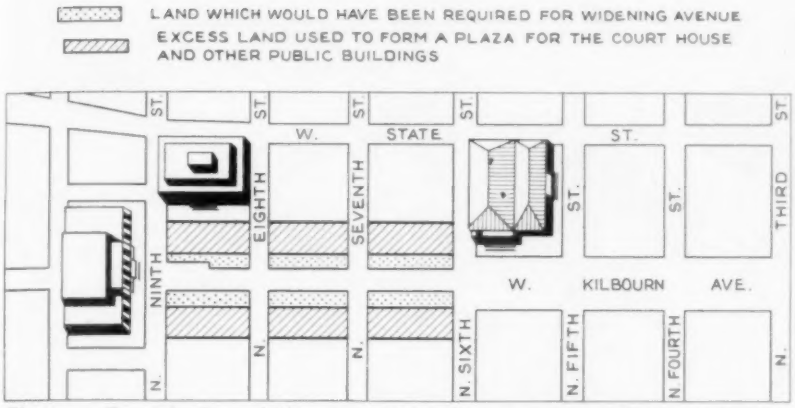

LAND WHICH WOULD HAVE BEEN REQUIRED FOR WIDENING AVENUE
EXCESS LAND USED TO FORM A PLAZA FOR THE COURT HOUSE AND OTHER PUBLIC BUILDINGS
W. STATE ST.
EIGHTH ST.
SEVENTH ST.
NINTH ST.
THIRD ST.
W. KILBOURN AVE.
N. SIXTH ST.
N. FIFTH ST.
N. FOURTH ST.
N.

Figure 1.—Excess land acquisition, West End, Kilbourn Avenue Widening, Milwaukee

Figure 4.—Brick building that was moved, rather than demolished

Figure 2, below, left.—In center and below the cleared land are the buildings to be demolished

Figure 3, below, right.—In background, the Court-House, and some of the buildings to be demolished

not been acquired, it is estimated that the cost of land acquisition will be approximately $4,000,000. While the avenue is to be 130 feet wide, as originally planned, immediately to the east of a $12,000,000 court-house enough surplus land is being acquired to form a plaza 370 feet wide around which other public buildings will be located. While approximately 54,000 square feet of additional property would have been required for widening Kilbourn Avenue to the desired 130 feet for the three blocks from Sixth to Ninth Street, the plan of development used for the remainder of the avenue, 252,000 square feet of land were acquired, or four times as much land as was needed for highway purposes. Figure 1 shows the development for the western six blocks. Figure 2 shows the present status as it appears looking east from the court-house, and figure 3 shows the project as seen from the auditorium looking west toward the court-house.

The acquisition of excess land has resulted in very substantial savings for Milwaukee. If Kilbourn Avenue had been merely widened, very heavy damages would have been incurred because of the partial demolition of buildings and because of the decided change in grade immediately east of the court-house. By purchasing excess land, the city acquired title to the lands affected and is making a very desirable public improvement.

For a considerable length, the widening program required the taking of 50 feet on the north side of the existing street. The lots in this area paralleled the street and were 60 feet wide. Without excess acquisition, remnants 10 feet wide would have remained. The city acquired these tracts and then sold them to the adjacent property owners at the purchase price per square foot. Therefore, by creating frontage on the new avenue, the value of adjacent properties was promoted, and the city may now levy special assessments against such properties and recover part of the cost of the new improvement.

In at least two instances trades were facilitated which greatly reduced the cost of acquiring some properties. In one instance 50 feet of a four-story brick apartment measuring 60 by 165 feet were required. The city, sometime previously, had bought at a reasonable price a lot immediately north of this apartment house. Instead of wrecking the building, it was moved at public expense to the lot to the north. It is estimated that a saving of between $75,000 and $100,000 was made in this one transaction. Figure 4 shows this building just before it was moved.

Another instance of the favorable use of surplus land occurred in connection with property owned by an oil company at the junction of Kilbourn Avenue and Juneau Park. This property was 90 by 120 feet. Through the acquisition of surplus lands, the city was able to develop a tract 60 by 127 feet at another location on the new avenue suitable for a filling station, and traded this, with two other small tracts, to the oil company for the corner on the lake front, paying in addition a relatively small cash consideration. This not only made it possible for Milwaukee to acquire the corner formerly owned by the oil company at a very reasonable price, but a very desirable site, 30 by 120 feet, overlooking Juneau Park and Lake Michigan, remains in public ownership.

(To be concluded in the January issue)

Strength and Liberty

Concluding paragraph from a challenging article by Frank Kingdon, "Toward a Dynamic Democracy," in Survey Graphic for November, 1940:

"We have one of the most difficult of all political paradoxes to engineer—to build a strong military and naval machine that will stay the threatening armies of world-wide reaction, and yet, at the same time, to purge and amplify the clean love of freedom without which any victories in the field will be nothing but a savage postlude to the most glorious dream of liberty that men have ever entertained. Mutually discordant as the two halves of our task seem to be, they together constitute the next step in our destiny. As we do them both well, we shall prove the power of our own people and set in motion forces able to drive back the wave of totalitarianism with a tide of power that will launch a new epoch of the triumph of freedom in the affairs of men."

Finances, Old Equipment and the Varied Character of Street Surfaces Hamper

Street Cleaning

In St. Louis, Mo., as Elsewhere, But Dogged Determination of Personnel Carries the Day and Furnishes Clean Streets Summer and Winter

By FRANK J. McDEVITT
Director,
Department of Streets
and Sewers

THE Scriptures state that cleanliness is next to godliness. How many municipalities can achieve this virtue in the face of prevailing conditions? Taxpayers are demanding a balanced budget. New forms of taxation are considered anathema. So, in the face of reduced revenues on one hand, and the burden of relief roles on the other, sanitation forces must secure results even though insufficient funds are allowed. Those in charge insist on increased personnel and new equipment. Fine! But what can be used for money?

As in the case of a hungry man unable to secure food, it is necessary to tighten the belt and pitch in all the harder. Economy and efficiency are in demand today as never before. The tax dollar must do double duty. Employees who refuse to cooperate should be replaced at once, regardless of political influence. Industry does not tolerate laxity—why, therefore, should a municipality be more lenient?

St. Louis has approximately 1,100 miles of streets, and the present fiscal budget allowance for street cleaning, which does not include any new equipment, amounts to $288,360. On this basis, annual unit costs are about $260 per mile, or 34 cents per capita. These figures are insufficient for a first-class job, but fairly good results are being obtained notwithstanding a handicap in men and equipment. Alleys require some attention also. There are about 400 miles of alleys with an average width of 15 feet.

Equipment

Present payrolls show 250 employees in the Street Cleaning Section of the Department of Streets and Sewers and, with an average age over 50, these men put forth an effort each day that would shame some of the younger generation.

The following equipment is available: ten 2,000-gallon motor flushers; two 2,500-gallon motor flushers. These units average fifteen years in age. In making repairs, parts are difficult to secure and frequently must be made in the departmental repair shop. Last year two 1,500-gallon South Bend flushers on GMC cab-over-engine trucks were purchased. These units can clean wide thoroughfares in one passage as compared with two on the older units. The difference is occasioned by higher nozzle pressure. There are available 6 Austin-Western motor pick-up sweepers and 24 snow-plows which can be attached to tank trucks.

In Spite of Handicaps

Even though street-cleaning forces and equipment are limited, good results can be obtained through careful planning and close supervision. Taxpayers are demanding economy and efficiency, so it is up to every municipality to carry out this mandate as far as possible.

The city of St. Louis is divided into north and south halves. Each half is subdivided into five districts, and the latter are supposed to be cleaned each week, except the business district, which is cleaned nightly. Actually, the procedure is to give preference to main thoroughfares, and some streets of less importance must therefore be neglected. This arrangement causes fewer complaints than trying to spread out the cleaning effort uniformly. In other words, with insufficient men and equipment, it is better to concentrate and do a good job on the heavily traveled streets.

Comparative Costs

Flusher operation, including cost of pick-up trucks, of which there are 41 of 1½-ton capacity, average $2.49 per curb-mile. Sweepers average $1.62 per curb-mile and would appear to be more economical. Unfortunately, this is not the case, for only about 50 per cent of the curb space can be properly cleaned, owing to parked cars. Repeated unsuccessful efforts have been made to eliminate all-night parking, and until this is done flushers will be preferable. Other handicaps to cleanliness are yardmen, janitors, and newsboys throwing or sweeping litter into the gutters. Warnings against this practice are only temporarily effective.

During the past two years sheet-metal refuse containers have been gradually replaced by strong galvanized wire baskets. This change was necessary owing to fire distorting the metal containers.

Snow Removal

Snow removal in St. Louis is not a difficult operation unless the storms follow one another in quick succession, as they did last winter. Twenty-four snow-plows attached

to the front end of heavy trucks are sufficient to keep the traffic lanes open, and a motor grader is available for the same purpose on the Express Highway. The removal of cinders and gravel spread at icy street intersections presents a more serious problem. Before this material can be picked up, heavy rains may wash a considerable portion into the sewers and inlets, where cleaning operations are far more costly.

At certain times during the year excessive snow or leaves may cause conditions with which the Street Cleaning Section is unable to cope. On such occasions additional help is secured temporarily from the Sewer Division and the three paving sections. Under this plan about 400 extra men and 75 extra trucks are made available for periods of one to three weeks.

Each fall conferences are held to map out plans for the economical and speedy removal of snow. Cinders and gravel mixed with salt are spotted at strategic locations throughout the city. A map is prepared showing all primary and secondary streets. The city is divided into ten snow-removal districts. All departmental forces are made available for this emergency work. When the occasion demands, they report without notification to the districts to which they are assigned. Planning of this sort avoids the necessity of employing outside help. Better work can usually be secured from regular city employees, so using outsiders for a short period should be avoided if possible.

A 2,000-gallon flusher of the trailer type which has seen 15 years' service in St. Louis

Efforts have been made to secure assistance from the WPA on emergency snow removal, but the Federal Government has ruled that the WPA cannot be used to usurp a regular city function, and snow removal is construed as such.

The character of paving plays an important part in cleaning. Whether flushers or mechanical sweepers are used, the results obtained are better on sheet asphalt or asphaltic concrete, followed by brick and granite block. Since about four million square yards of old brick and granite block streets have been resurfaced in the past seven years, the even surface has been a potent factor in cleaning operations.

This new cab-over-engine flusher has a 1,500-gallon capacity tank

England Looks Towards Post-War Housing and Town Planning

IN a broadcast from London over the Columbia Broadcasting System on November 3, Larry Laseuer, CBS European correspondent, stated that there is already talk in England about what Britain is going to be like after the war, and that a special committee is reported to have been set up by the war cabinet to study this problem.

"Broadly speaking," said Mr. Laseuer, "the committee will work with two main objectives—better housing conditions and more logical town planning, and more equitable economic administration. One of the first measures the committee will have to deal with is the reemployment of soldiers, sailors and airmen as soon as they are demobilized. Pertaining to further expansion in London is another matter under consideration, and areas devastated by bombs and fire may be laid out as open spaces instead of being rebuilt. The educational system may also be improved, and scholarships provided so that the poorest children may have a chance to go to the best public schools in the country. It is said that plans are also being considered for reorganizing local governments for the pooling of public services to get improved and cheaper living conditions.

"A $750,000,000 road work plan has also been thought of to absorb the unemployed soldiers and civil defense workers as soon as the war is over. Another $250,000,000 may be spent on land reclamation. That would bring many thousands of acres into domestic food production, something Britain could well use."

Floyd River Floods Ended by Concrete Lining of the Banks

Sioux City, Iowa, Completes Program to Protect Its Industries and Homes from Recurring Floods

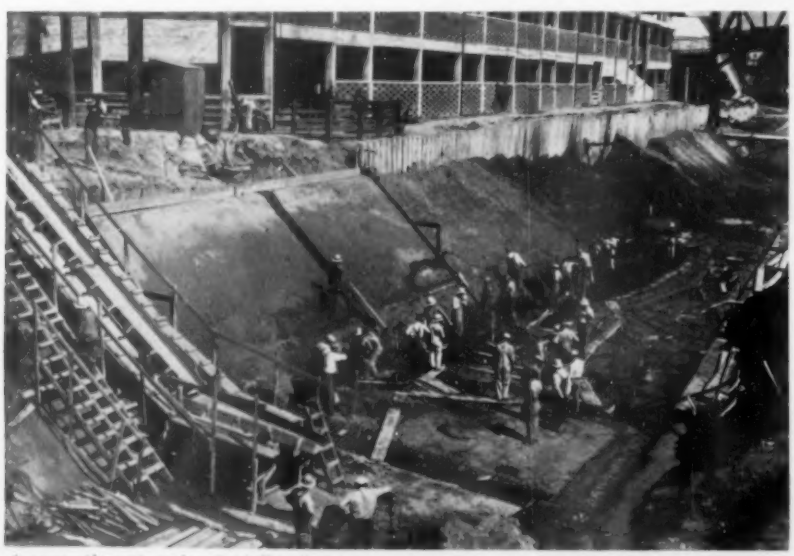
FOR almost half a century, the residents of Sioux City dreaded the annual period during which the normally placid Floyd River would develop into a turbulent flood causing loss of life and thousands of dollars in property damage. The most disastrous of these floods occurred May 18, 1892, with loss of 25 lives and property damage estimated at over $1,000,000. Today, after five years of planning and work, the Floyd River is controlled. The summer of 1940 saw the completion of a concrete lining to carry the river for almost one mile through the packing-house and industrial district to its confluence with the muddy Missouri River.

The Floyd River, rising in Osceola and Lyon Counties, in the extreme northwest corner of Iowa, flows southwesterly, a distance of about 68 miles. The lower five miles of its course lies within the city limits of Sioux City, and then it meanders in almost every direction before reaching the Missouri. Twenty square miles of Sioux City's 48 square miles lie in the watershed of the Floyd, and about five square miles are on the flood level subject to overflow from the river.

Design of the Project

After much preliminary planning with engineering consultants and the U. S. Corps of Engineers, a WPA project was approved to control the flood flows of the Floyd. On November 22, 1935, a WPA crew was assigned to the project involving the creation of a 200-foot channel with 14-foot dikes on either side as well as several channel changes to halt some of the meandering.

The elevation of the top of the vertical walls is determined by a theoretical water level in a 25,000 second-foot flood which estimates a velocity of 13 feet per second. This velocity would be destructive unless the channel were protected. Various methods of lining the channel were considered before making the decision to pave.



A concreting operation in full swing in a section where industrial buildings crowd the river bank

Financing

When Sioux City officials realized, in 1935, that financial assistance could be secured from WPA, the question arose as to what method of financing could be adopted by the city. Under Iowa state laws a city is empowered to float bond issues for flood protection without a public vote. A total of $870,000 in bonds has been issued for the Floyd River work by the city in five issues, all of which will be retired by 1956.

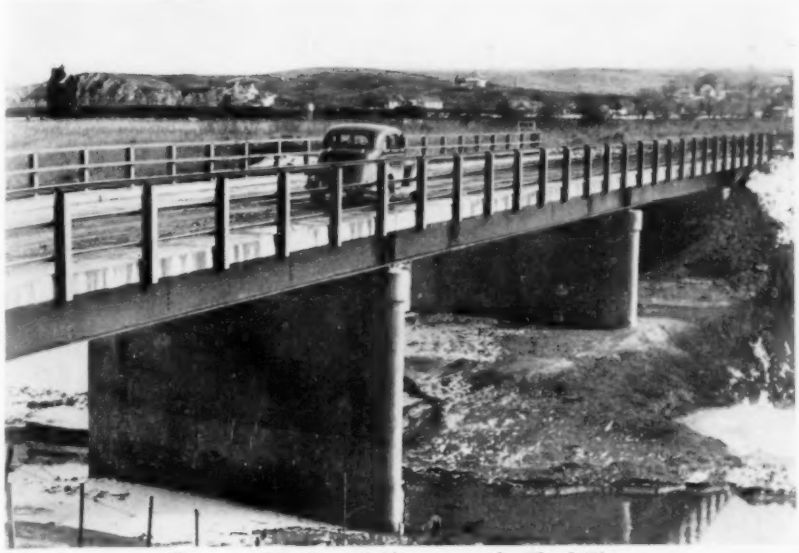
The Federal Government has spent $3,933,026 on the Floyd River projects, which includes $3,482,680 for wages for the workmen and $450,346 for material, equipment and other non-labor items.

Excavation

The channel widening provided employment for as many as 2,800 men during the drouth relief program in the summer of 1936, supplemented at one time by seven draglines and fifty motor trucks. The draglines were used to throw up diversion dams and dikes to keep the water on one side of the channel while the lining for about two-thirds of the bottom and the opposite slope and side wall were constructed.

Concrete Work

It was not until December 8, 1937, that the first concrete was poured for lining the lower channel. Work then proceeded without interruption during the first winter months, as well as the two winters that followed. Tarpaulins and salamanders protected the workmen as the excavation continued and the concrete was poured. After the lining was completed for approximately 500 feet, the dike was moved



The new 18th Street Bridge, across the Floyd River

onto the concrete base, the water was diverted into the channel, and the lining for the remainder of the channel was finished.

While the original plans called for the lining of 5,300 feet from the mouth of the Floyd, it was decided to halt the work at the 4,900-foot mark. This was done because of possible channel changes which might be made in the future and which would entail removal of any lining extending north of this terminal point.

From wall to wall the lining averages 140 feet in width, varying from 138 to 143 feet, except for the flare at the mouth of the river. The lining is 6 inches thick and heavily reinforced. There is a fall of approximately 3.24 feet from the north end of the channel to the mouth of the river. Because of the stock yards and packing plants which are built close up to the river banks, the width and height of the lining is varied. When the cross-section or grade is changed, it naturally will affect the velocity of flow, and therefore the height of the vertical walls was varied accordingly.

Bridges

In connection with this project it was found necessary to repair one street-car bridge and one foot-bridge. On the upper channel where the widening occurred and the dikes were built, two new bridges have been completed already, and two others will be completed later. All these are three-span bridges with heavy steel beams and concrete decks and are 230 feet long. The new elevation of the bridges equals that of the adjacent dikes, which made it necessary to establish new approaches from the existing roads.

Labor and Hours

For more than a year during this work a 24-hour schedule was maintained, with floodlights providing illumination so that the excavation and form work continued without interruption. During the latter stages of construction a 15-hour double-shift was maintained with the men working 7½ hours on each.

"Proof of the Pudding"

A partial test of the ability of the new channel to handle water during flood conditions occurred on June 5, 1940, after two days of heavy rain in the Floyd basin when the rainfall varied from 3.1 inches in Plymouth County to 6.32 inches in Sioux City. A testing station on the Floyd River, at James in Plymouth County, showed a rapid rise starting on June 4, and continuing to a crest of 15.40 feet at 9:30 the following morning. In the past, a mark of 14 feet has always been considered the flood stage at that station. Few Sioux City residents realized that such a heavy rain had fallen north of the city, because of the rapidity with which the new channel of the Floyd carried the water. All equipment currently in use in the construction of the concrete lining was removed to safety and none was lost.

WILLIAM A. RAPP

For 55 years continuously an employee of the City Water Works of Atlanta, Ga., William A. Rapp passed away on November 19. At the time of his death he was Superintendent of Construction and Distribution of the system which he helped to build. He became affiliated with the Water Works Department in 1885, when Atlanta was a small town with only 21 miles of water mains, and he saw the development of a metropolis and the expansion of the system to more than 700 miles of mains and 60,000 users.

The passing of Mr. Rapp has saddened the hearts of all who knew and loved him, especially his many friends in the water-works field. His life of unselfish service was crowned by the tribute paid to him by Mayor W. B. Hartsfield as "one of the city's most valued public servants, to whom the water works stand as a living monument."

Night illumination for a second shift rushed excavation and form work to hasten completion

Compact Water System Built Around Radial Well

Penns Grove, N. J., Water Works Uses New Collection System

THE water supply of the Penns Grove Water Co., at Penns Grove, was augmented on January 3, 1940, when a new radial water collector with seven laterals was placed in service. The complete pump station and chemical treatment building are built over the top of the 13-foot inside diameter concrete caisson which is the center of the Ranney collector system. About 1 mile east of the center of Penns Grove, the company bought a tract of several acres in a gravel formation. The concrete caisson was sunk to a depth of 33 feet, with pipe inlets and valves for twelve laterals or radial wells ranging from 3 to 9 feet above the bottom. Then, 8-inch pipes were jacked radially for distances varying from 30 to 113 feet through seven of the openings, the distances varying according to the difficulty in jacking the Toncan slotted screen pipe. As the slotted pipes were forced outward, a 2-inch sand discharge pipe inside the larger pipe drew out the inflowing sand, discharging it in the caisson, leaving the screens surrounded by gravel, increasing the capacity of the radial wells.

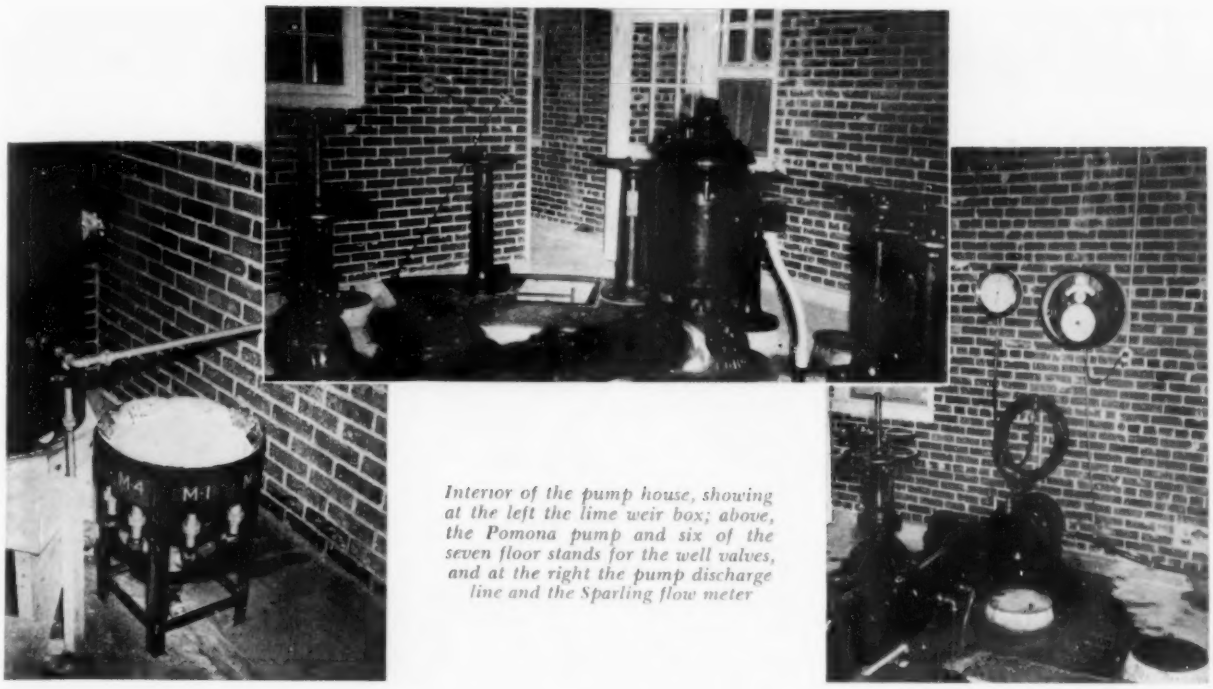
The caisson is decked with a 10-inch thick reinforced concrete slab in which are cast twelve holes for twelve floor stands for operating the valves on the laterals below.

The inside of the radial well caisson looks like this. The apparently large pipes extending from the right are the rubber steam hoses delivering lime to the water entering from the seven wells

As only seven radial wells have been driven, there are only seven floor stands for operating the Crane valves. In addition, there is one opening already equipped with a 40-hp Westinghouse motor driving a 650-gpm Pomona pump at the bottom of the caisson. The positions for two other pumps are available with circular openings in the roof of the pump station for the tackle for handling the pumps, and an opening in the floor adjacent to the office and chemical room door covered with an iron plate where the new pumps can be lowered into the caisson, when required.

In the pump room is an Ashcroft pressure gage on the outgoing line, indicating the pressure on the system, which depends on the amount of water in the standpipe and elevated tank, which float on the line. The pressure is usually maintained between 40 and 55 pounds at the pumping station. A direct reading and recording Sparling meter is installed on the discharge line in a pit just outside the pumping station, with the recording device in the pump room. Between the pump and the outer wall of the station are an 8-inch Darling

A general view of the 20 x 26-foot pump building on the 13-foot inside diameter radial well caisson



Interior of the pump house, showing at the left the lime weir box; above, the Pomona pump and six of the seven floor stands for the well valves, and at the right the pump discharge line and the Sparling flow meter

check-valve, a Darling gate-valve, and then a cross which is blanked off at the two ends for the future pump connections.

Chemical Treatment

The building itself is built of brick and measures 20 x 26 feet, and about one-third of the floor area is devoted to a small office and the adjacent chemical room, where a Wallace & Tiernan vacuum type chlorinator is installed discharging Pennsylvania Salt Co. liquid chlorine at the rate of about 0.75-pound per day of 18 hours' operation into the discharge line just ahead of the meter. Pressure for delivering the chlorine solution to the water is furnished by a Weston pump driven by a Century induction motor.

A high grade of lime is delivered in suspension to the discharge ends of each of the radial wells in a novel manner. A Wallace & Tiernan dry feed machine measures the lime and delivers it to a vortex box where it mixes with the water and then flows to a weir box where the discharge is uniformly divided into seven parts by flowing over seven of the twelve weirs provided and into separate rubber steam hoses. These hoses operate very well for about six months without clogging, but if for any reason any one of the hoses is touched or squeezed so as to break the thin film of lime on the inside, the line plugs up quickly in spite of the 30-foot drop of the chemical through the pipe.

Weekly bacteriological tests are made by the Wilmington, Del., Municipal Laboratory, and have shown negative on all presumptive tests for gas formers from 10 to 100 cc.

A General Electric automatic electric fan heater is located in the pump room and another in the chlorine room to maintain the temperature at 70 degrees.

The plant is operated on two shifts. The first is from 5 A.M. to 1.30 P.M., and the second from 1:30 P.M. to 12 Midnight, then the plant is closed down until 5 A.M. unless a fire occurs in town, when it is immediately put into operation. The two operators change shifts on Sunday. The actual time of operation of the plant during which the pump is operated runs about 15 hours per day in summer.

The typical drawdown in the caisson when the plant is operating 18 hours a day and was started at 5. A.M. showed the following elevation of the water below the floor level of the pump station:

8 A.M.—18 feet 2 inches.
12 Noon—25 feet 8 inches.
8 to 12 P.M.—27 feet 0 inches.

The plant was designed by Malcolm Pirnie, consulting engineer, New York City, with Robert W. Sawyer as engineer for the consultant. It was built by The Ranney Water Collector Corporation of New York and is operated by the Penns Grove Water Supply Co., with J. C. Feaster as Resident Superintendent.

A Protest Against Needless Alienation of Park Lands for National Defense

AT A MEETING on October 31, the Board of Directors of the National Conference on State Parks adopted unanimously the following resolution:

Whereas, past and present experience indicates the likelihood that effort will be made at many points to take over for national defense purposes lands and facilities which have been acquired and dedicated to provide healthful outdoor recreation for the people of America; and

Whereas, particularly and especially in times of stress, park and other areas developed and dedicated for recreation are vitally needed in maintaining the health and morale of the general population and specifically of those engaged in defense activities; therefore be it

Resolved, that the National Conference on State Parks, acting through its Board of Directors, most strongly urges that all agencies charged with administration of areas dedicated to park and recreation purposes maintain a definite stand in opposition to any alienation of these areas for which it cannot be conclusively shown that such alienation is necessary for the national defense, and we further earnestly urge that the defense authorities in determining their land requirements for military purposes give the fullest consideration to the defense values of park and recreation areas.

Dual Diesels Power Pumps

Bourne, Mass., Water District Discounts Loss of Power in Case of Repetition of New England Hurricane

THE new pumping station of the Bourne water supply furnishing water from three wells to Monument Beach, Pocasset, Cataumet and Bourne is well designed to prevent a repetition of the loss of water supply experienced in the hurricane of September 21, 1938, when failure of electric power lines put so many New England water supplies out of commission. There are two independent diesel engines, driving 800- and 400-gpm pumps, the former being started by an electric-driven compressor supplemented by a small gas-engine-driven unit, and the pair of vacuum pumps are powered, one by electricity and the other by a gas engine. Even the small electric fuel oil pump which raises diesel fuel from the outside supply tank to the gravity feeder tank on the wall of the station is duplicated by a hand pump.

Location and Source

The pumping station and three wells are located on a plot of ground on the County Road about 1 mile south of the center of Monument Beach, which itself is close to the center of the Bourne Water District. This District is on the east shore of Buzzards Bay extending from close to the southwest end of the Cape Cod Canal for a distance of some 7 miles. There are about 30 miles of cast iron pipe from 12-inch down to 6-inch in the distribution system, and all the pipe is lined with bituminous enamels. At Monument Beach there is a new 250,000-gallon elevated steel tank and another of 200,000 gallons at the southern end. Each of these tanks overflows at 234 feet above mean sea-level.

The population served by the District varies from about 1,000 in winter to approximately 5,000 in summer. During the winter of 1939-40, the 800-gpm pump was operated about one hour per day to keep the tanks filled. During the summer of 1939, when the system was first placed in operation, the 400-gpm pump was operated up to twelve hours a day because of the flushing of dead ends in the line and the sterilization of the new tanks. During the present summer, however, the 800-gpm pump has been required to operate only between four and five hours during peak consumption.

The three 18-inch Layne-Bowler gravel packed wells, which supply all the water required for the Bourne Water District, are close to the pumping station. One, which is 73 feet deep, is about 50 feet from the station, and the other two, which are each 51 feet deep, are about 500 feet from the station, so all three wells are non-interfering.

Exterior of the Self-Sufficient Pumping Station of the Bourne Water District

Pumping Equipment

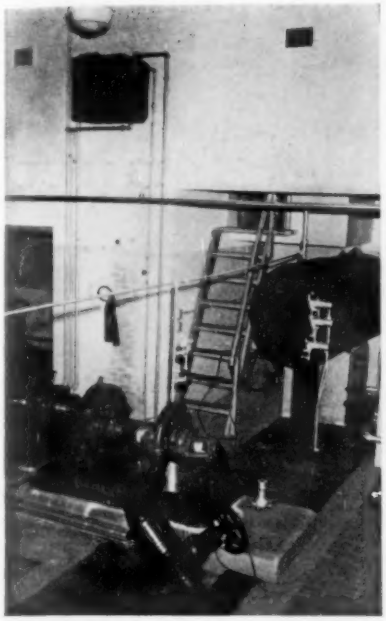
The smaller of the two pumps installed in the station is a 400-gpm Fairbanks-Morse centrifugal driven by a 4-cylinder Caterpillar diesel engine through a Universal Gear Corp. reducing gear. The second pump is an 800-gpm Fairbanks-Morse centrifugal driven by a Worthington diesel through a Link-Belt reducing gear. Each diesel engine is supplied with diesel fuel oil from a feed tank by gravity. A 2,000-gallon diesel oil fuel tank and a 500-gallon tank for the oil heater are buried in the ground outside the station.

Accessory Equipment

A small centrifugal fuel oil pump driven by a ½-hp Wagner motor is used to transfer diesel fuel from the main 2,000-gallon storage tank to the feed tank on the wall. In case of power failure, the diesel fuel may be transferred by a small Deming Co. hand pump mounted on the front wall.

The Worthington diesel engine is started by compressed air maintained at 175 pounds pressure in a starting tank by a Quincy air compressor driven by a Wagner 2-hp electric motor. Supplementing this is a duplicate compressor driven by a Briggs & Stratton air-cooled gasoline engine. The Caterpillar diesel is started by a built-in gas starting engine which is turned over by hand.

Inasmuch as the main pumps are not built to raise water from the wells, they are primed continuously by a vacuum system which raises



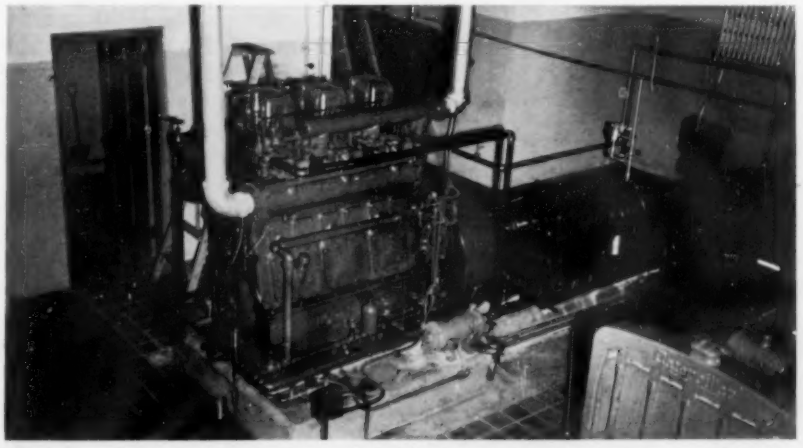
The 800-gpm Pump, Fuel Feed Tank on the Wall and Cylindrical Vacuum Tank for Priming the Pumps

the waters of the wells into a 500-gallon vacuum tank the bottom of which is level with the top of the pumps. The vacuum is maintained by a Nash HyTor vacuum pump driven by a Westinghouse 2-hp motor. The auxiliary vacuum pump of the same size is driven by a Lauson water-cooled engine.

The pumping station is an attractive brick building of colonial design in a grove of pine trees. The entrance is to a mezzanine gallery and then by steps to the main part of the station, which is virtually the basement. The attic above the entrance level contains the air pressure tank for starting the Worthington diesel engine. At one corner of the main floor of the station is an Arco hot-water heater with an Arcoflame oil burner.

The switchboard beneath the mezzanine gallery at the entrance to the plant permits complete control of all electrical equipment from one point. Mounted on this Clark Controller Co. switchboard also is the recording dial of the Bailey fluid meter which indicates in two colors of ink the pressure on the system and the rate of flow or discharge of the pumps.

The new water system for the Bourne Water District was placed in operation on June 25, 1939. The plant was designed and its construction superintended by Whitman & Howard, consulting engineers, Boston, Mass. E. S. Bolles is in charge of the pumping station of the Bourne Water District, with headquarters at Monument Beach.



The Worthington Diesel Engine and Fairbanks-Morse Centrifugal Pump with the Caterpillar Diesel in the Right Foreground

Status of Municipal Employees Called to Defense Training

A Steadily Increasing Number of Cities and States are amending their personnel policies to protect the status of their employees called to defense training, the Civil Service Assembly of the United States and Canada reports.

The state of Michigan and eight cities—Columbus, Ohio; Detroit, Flint, Mich.; Evanston, Ill.; Los Angeles; St. Petersburg; Akron and Seattle—are among those that most recently have adopted measures affecting regular employees called for training, persons eligible for jobs, and substitutes for regular employees. All grant leaves to employees called, but only Evanston provides for supplementary pay. Employees with at least three months' service with Evanston get leave and, for the first three months of training, they receive the difference between military and city pay, the difference not to exceed $150 a month. Various rights, benefits and privileges—such as promotion, retirement, vacation and sick leave—are protected by the rulings of Detroit, Evanston, Akron, St. Petersburg and Seattle.

Employees discharged from military service must make application for reinstatement within 40 days in the state of Michigan, 60 days for regular army men and 5 days for National Guardsmen in St. Petersburg, and 90 days in Los Angeles. Adopted policies reflect the intention to restore trainees to their old jobs or, if those have been abolished, to similar jobs, the Assembly said. St. Petersburg stipulated competency on return and honorable discharge; the state of Michigan, honorable discharge. The Flint compulsory reinstatement measure contained the proviso that, in case of injury, trainees would receive positions equal to their capacity.

Ruling on persons on eligible lists called into service, Columbus held they would retain their positions on the list and, if a new list is created, the same relative positions as on the old list. They will be eligible within thirty days after discharge for certification to jobs and will continue to be eligible for two years unless they elect to take an intervening examination. Detroit eligibles who are called to service and inform the Civil Service Commission within 45 days after induction will, on their return, be considered appointed if they have been reached on the eligible list. They must indicate they want jobs within 30 days after discharge. In Michigan, eligibles for state jobs called to duty may within 60 days have their names suspended for the duration of service, and reentered in the appropriate place after their honorable discharge.

Temporary employees taking the place of war service employees in Detroit receive no right to permanent tenure, nor do they in Flint unless a vacancy occurs in the same classification, in which case they will be given permanent status. In St. Petersburg, no temporary employees may retain the jobs they filled. If any regular employees have been promoted to fill positions of those on leave, they will return to their original jobs.

Refuse Collection— Orderly and Well-Planned

Montclair, N. J., Saves Money by Study of Service and Shifting from Contract to Municipal Collection

A VALUABLE example of public works efficiency in the collection of refuse from households is found in the town of Montclair, an outstanding residential community of the New York metropolitan area. A healthy reduction in the cost of refuse collection, with improved service, has been the result of an orderly study and a well-planned collection system.

Prior to 1932, the cost of refuse collection in Montclair was approximately $120,000 per year. That figure did not change materially from 1933 to 1937, when collections were made by private contract. In the latter year, when the lowest bid submitted was $119,960, the town decided to take over the job in the interest of economy, and an entirely new collection system was planned. The comprehensive study which was undertaken indicated that with proper equipment and direction a very real saving could be made.

New Equipment and Reduced Schedule

The first move of the Department of Public Works, following its study, was to purchase a fleet of twelve White motor trucks equipped with Gar Wood steel bodies designed especially for refuse collection. These units were put into service immediately under able direction, and the cost figures for the first year, including depreciation on the equipment, overhead and other direct and indirect charges, dropped to $94,729, effecting a saving of approximately $25,000.

Prior to this time three collections were made each week. Town officials made further studies and found that a still greater economy could be effected by instituting a schedule of two collections a week, as the extra collection was not really needed. This was done, resulting in the costs being reduced to $84,200 per year.

Loading One of the Fleet of Twelve 16-Cubic-Yard Refuse Trucks Owned by the Town of Montclair, N. J.

The present savings of $34,000 per year over contract collection of refuse alone has already more than paid the cost of the truck fleet, $54,000, and the vehicles are expected to serve effectively for at least another five years. Many operating improvements also have been made. For example, prior to municipal operation, collection was made in the early morning hours, so that merchants in the central business district were required to set out their refuse the evening before. The result was that by morning the action of wind and small boys and animals had scattered the litter quite widely in the business district. Under the more elastic municipal schedule the collections are made later in the day, so that it is no longer necessary to have the refuse standing out all night.

Trucks Do Other Work

In addition to the savings effected in the collection of refuse, the trucks are used in other work. When not carrying refuse, they may be hauling excavated material, leaves, snow or other rubbish to keep the 80 miles of streets clean. During the construction season in the spring and summer, they haul large quantities of earth and stone for the town, and in the autumn they are used to haul away the tremendous volume of leaves falling from the hundreds of attractive shade trees which line practically all the streets of this commuting town. In the winter they are used to handle snow-plows and also to carry away the snow which is loaded into them by a Nelson snow loader. During the winter the trucks thus work frequently on a double schedule, collecting refuse by day and fighting and removing snow at night, an economical arrangement

The trucks are powerful enough to handle pusher plows for windrowing the snow at the sides of the streets, ready for the snow loader below to pile it into the big 16-yard bodies

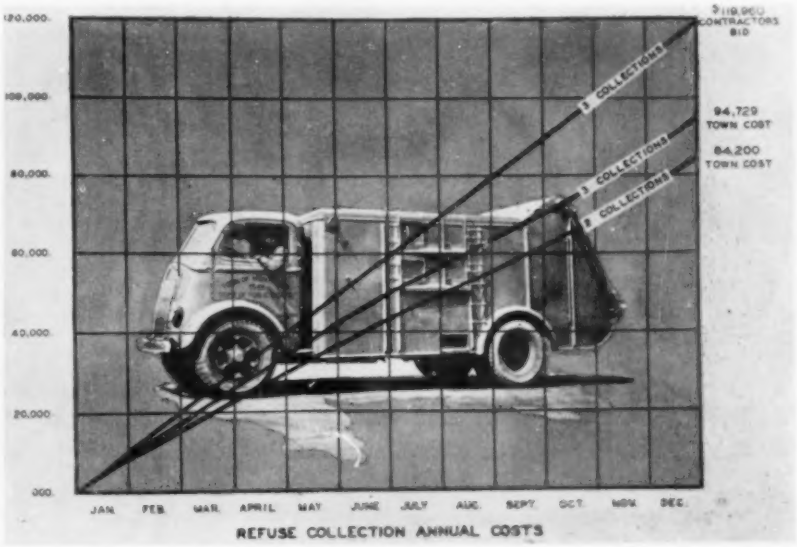
ting example for other municipalities that are striving for lower costs and improved service.

Expert Paving Patching

(Continued from page 41)

face to cause fat spots, which leaves lines across the pavement showing where the joints are located.

The contract patching crew of Edw. Balf Co., Hartford, Conn., is in charge of Frank Farrell, asphalt foreman. Leon F. Peck is Superintendent of Streets in Hartford, and Raymond W. Smith is Inspector on pavements. H. I. Skilton is Division Engineer in charge of paving and paving repairs.



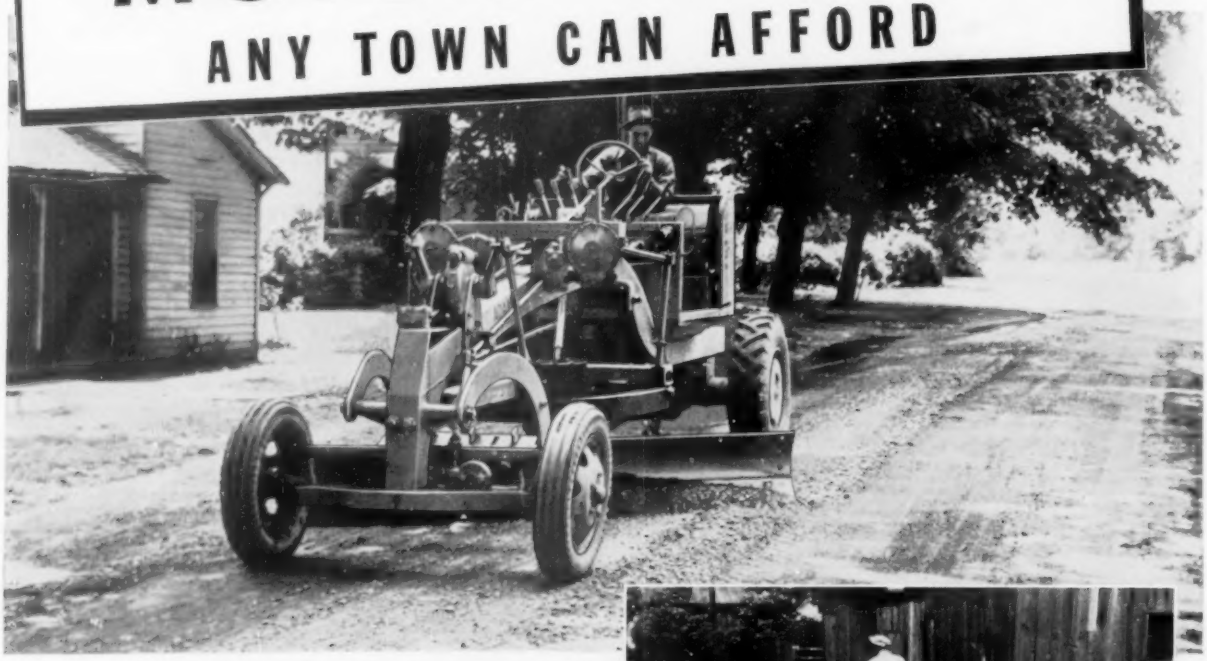
A graphic presentation of the savings possible with municipal collections and a reduction in the number of collections per week

with practical advantages. The use of the snow loader delivering windrowed snow into the 16-cubic-yard bodies makes possible the removal of a very large quantity of snow per hour; thus the trucks save several thousand dollars more in truck hire each year for the town, in addition to their regular refuse-collection service.

Manned by capable operators, this fleet of trucks has performed satisfactorily under the efficient engineering management of Stuart M. Weaver, Executive Assistant to the Director of Public Works. The record at Montclair serves as a fit-

When needed, the big 16-yard trucks can haul away snow instead of refuse. Quick loading with a Nelson loader increases the economy of the work

A *New* LOW-PRICED MOTOR GRADER ANY TOWN CAN AFFORD



• Adams Motor Grader No. 20, hundreds of which are seeing service in cities and towns on all kinds of grading work, has been replaced by the No. 201 which offers still more value for your motor grader dollar with the same low investment and operating costs. Here are some of the features you'll like:

INCREASED POWER: The No. 201 is powered by a new 31-hp. gasoline engine mounted over rear axle for maximum traction and better visibility.

FULLY POWER CONTROLLED: Mechanically-operated power controls make *all* adjustments positively and quickly.

BANK-TO-BANK USEFULNESS: Mono-member frame permits cutting of high banks and provides wider shoulder reach, more blade clearance, etc. (Blade is fully reversible.)

LEANING FRONT WHEELS: May be had for better ditch and bank work and better front-end control.

FIVE FORWARD SPEEDS: Three speeds for ditching and heavy maintenance, a fourth for average maintenance, and a travel speed of 12.9 mph.

SINGLE REAR TIRES: For better traction at all times—particularly in ditch and bank work.

* * * *

The No. 201, in general design and operating advantages, is in the class with the larger Adams Motor Graders in that it is a *thoroughly modern, high-blade-lift, all-purpose machine.* . . . For complete information and your local dealer's name, tear out and fill out the coupon below and mail it today.

ADAMS MOTOR GRADER *Number* 201

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Gentlemen: Please send me complete descriptive folder on your Adams Motor Grader No. 201, which you recommend for cities and towns.

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Address .....

Using Sludge Gas

Modulated Burning of Sludge and Manufactured Gas a Feature of Grass Island Plant, Greenwich, Conn.

THE modulated burning of sewage-sludge digester gas, with manufactured gas when required, instead of the off-and-on method used at many plants with an auxiliary oil burner or coal fire, is a distinct forward step in the new art of sludge-gas utilization developed at Greenwich. A well-thought-out design with adequate safety devices automatically adds city gas to the sludge gas when sludge-gas pressure or heat drops in the boiler used to heat the water for the digester, and also for the administration building and digester gallery in winter at the Grass Island plant.

Modulated Gas Controls

To distinguish between the pipe lines carrying sludge gas and those carrying manufactured gas, all sludge-gas lines are painted aluminum, and manufactured gas lines are painted green. The sludge gas from the digester at the Grass Island plant enters the administration building through a 2½-inch line with a thin plate orifice inserted in the line, and the flow recorded by differential pressures on a Builders Iron Foundry recorder, which also records the pressure. Manufactured gas at 7 pounds pressure is received at the plant and reduced to a pressure of a 5-inch column of water and then is measured through a standard displacement meter.

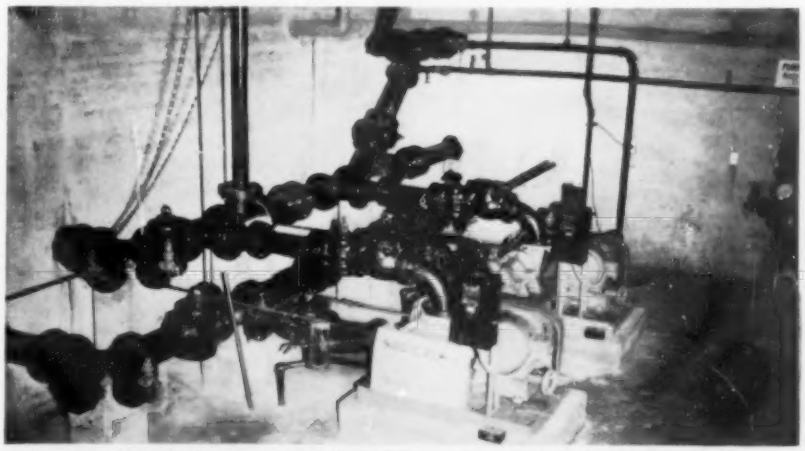
For protection, the sludge gas passes through a PFT flame trap just beyond which is a tap and control valves so that either sludge gas or manufactured gas for the laboratory or hot-water service heater may be taken off at that point. The sludge gas then flows through a shut-off valve, immediately after which is a check-valve, and then also inserted in the same pipe on the way to the burner in the boiler is an automatic valve. This automatic control valve is operated by three separate and distinct elements: (1) the temperature of the water in the boiler, which modulates the flow of the gas to maintain any desired temperature or to cut off the gas when the water gets to a predetermined high temperature limit, this being done with a Detroit Lubricator Co. thermo-electric gas valve; (2) an automatic pilot immediately shuts the valve if the pilot flame goes out; (3) the valve is also controlled by low gas pressure and cuts out the line entirely when there is less than a 2-inch water column pressure on the sludge gas line. This is done with a Detroit Lubricator Co. Mercoid switch.

The regenerative gas burner is made by the Webster Engineering Co., and is inserted in a Knowlton water-tube steel boiler having copper water tubes. This boiler has been in service for over a year, yet the tubes are still free of any deposits.

Just ahead of the regulatory controls a ½-inch pipe, to carry pressure, takes off from the sludge-gas line and leads to the underside of a Chaplin-Fulton weighted illuminating regulator, or diaphragm valve, on the manufactured-gas line. This diaphragm valve opens the manufactured-gas line as the pressure falls on the sludge-gas line, so as to maintain a gas pressure of not less than 3½ inches of water on the burners. When the pressure of the sludge-gas and manufactured-gas mixture rises, the diaphragm valve cuts off the flow of manufactured gas. The range of cut-off is very small: a differential in pressure of only 0.2-inch is sufficient to open the diaphragm to permit the flow of manufactured gas or to shut it off.

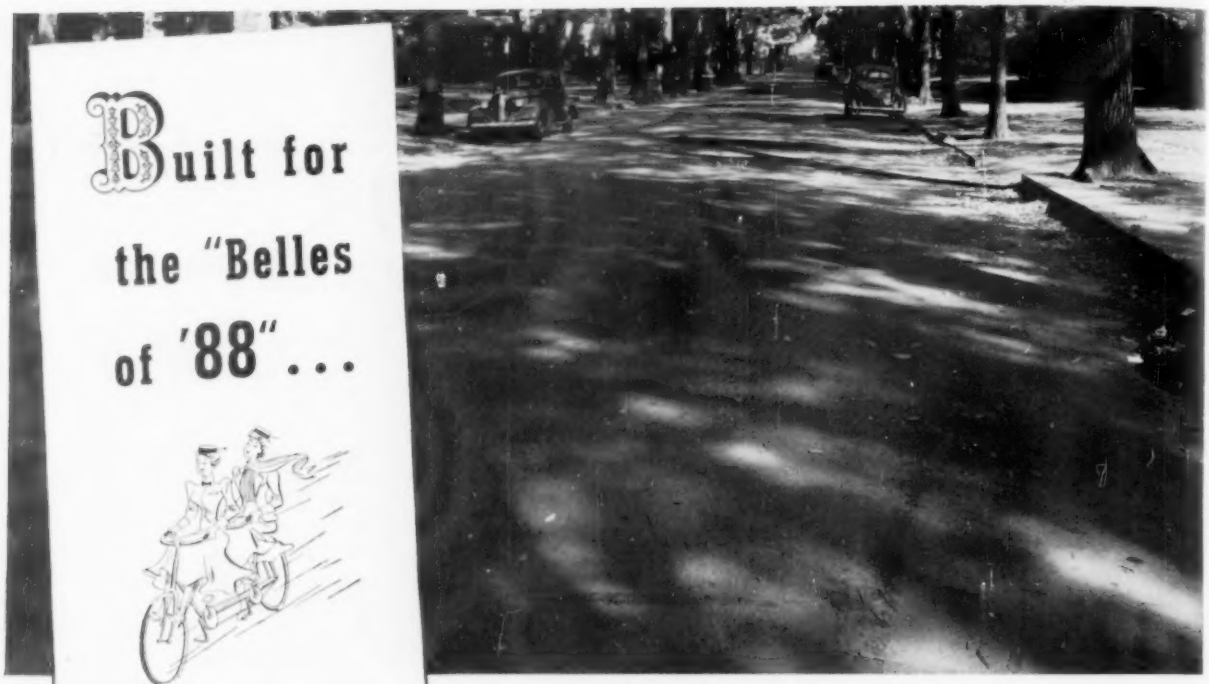
Mounted on the side of the boiler is a pair of manometer tubes designed by Guy E. Griffin and Fred Schirmer, an assistant-operator at one of the other Greenwich plants. The left-hand manometer tube shows the pressure of the manufactured gas, while the right-hand tube shows the pressure of the sludge gas or the mixture of the two gases. The scale is adjustable so that it may be lowered as the liquid in the tubes evaporates. Specially drilled gas cocks at the top of each tube make it possible to shut off the gas to the manometer tube and in so doing to vent the pressure in the tube to the air. In this way the scale can be easily checked for the zero point.

The pilots in the boiler can use either gas, but to date only manufactured gas has been used for them



The Scrupeller Sludge Pumps in the Basement of the Storage Building at the Grass Island Sewage-Treatment Plant, Greenwich, Conn.

Built for the "Belles of '88"...



TRINIDAD Native Lake Asphalt was selected as a paving material back in the '80s and '90s when many thousands of miles of streets and highways were paved for the first time.

Today a lot of these same pavements are still in good condition because Trinidad Native Lake Asphalt *does defy time!* From generation to generation, its uniformity and quality stay the same. It retains its resiliency. And it resists wear partly because it has a colloidally dispersed mineral filler that cannot be duplicated commercially in any other asphalt.

AND LOOK AT IT TODAY!

• Oakland Place, between Summer and Bryant Streets, Buffalo, New York. Here is a Trinidad Lake Asphalt pavement laid down in 1888—52 years ago. The original cost per square yard was $3.026. In the 52 years the total repair cost has been the remarkably low figure of $1.645 per sq. yd.!

Isn't this the kind of service record you're interested in? Barber Asphalt Corporation, sole distributor of Trinidad Native Lake Asphalt in the United States, can supply you with a complete line of asphalts for highway construction and maintenance. Mail the coupon for information about the products you are most interested in.

TRINIDAD NATIVE LAKE ASPHALT

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☐ BARBER BLOCK AND JOINT FILLER

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because the sludge gas burns too slowly for the excessively high draft in the chimney. The burner used in this boiler consists of eight refractory mixing tunnels with gas ports at the entrance. Pilots extend just beyond the gas ports in each tunnel in order to be sure to ignite the gases immediately and reduce danger of an explosion.

Heating the Digester

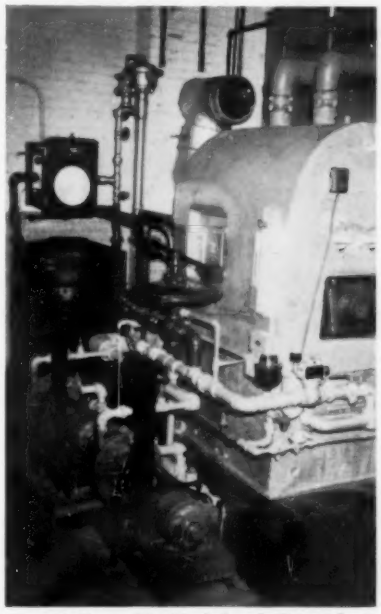
Two small Gardner-Denver centrifugal pumps, each driven by a ½-hp General Electric motor operating on a 220-volt circuit, are alternated every fortnight and operate 24 hours a day pumping cool return water to the steel boiler described above and forcing hot water at 180° to a loop of pipe which extends to the digester gallery. In the gallery is another similar pump which circulates water within the coils inside the digester to maintain the sludge at optimum temperature. When the temperature of the water in the digester falls below that desired, a Terrice regulating valve is opened automatically, taking in hotter water from the initial loop previously mentioned and allowing some of the cooler water to flow back to the boiler.

This arrangement makes it possible to use the hotter water from the initial loop to supply heat to the radiators in the administration building, pump-house and digester gallery. In the gallery, an iron case meter, furnished by the Metric Metal Works, measures the waste sludge gas which goes through a PFT pressure relief and flame trap to a PFT waste-gas burner. The pilot on this burner has spark-plug ignition operated from the administration building to make it possible to light the pilot if it should be blown out in a high wind.

The digester is 30 feet in diameter and has a 25-foot side-wall depth. A pair of Foxboro indicating thermometers in the gallery show the temperature of the water entering and leaving the digester coils. A third similar thermometer indicates the temperature of the sludge at about mid-depth and about 6 feet in from the gallery wall. An electric pump installed in the gallery is arranged to pump supernatant liquor to the gas dome and to a spray ring under the cover to break up scum. The digester is equipped with a PFT floating cover which is accessible by a set of iron stairs going up the outside of the digester.

Sewage Treatment

The sewage treated at Grass Island is almost entirely domestic and is collected by gravity, except for one small area which is pumped, and flows to the plant by gravity through a 30-inch line. The average flow is 2.5 mgd, but at time of storms, owing to heavy infiltration into 50-year-old sewers, the flow jumps to 6 mgd or more, and since the plant is built to handle only 5 mgd, there is an overflow chamber which permits dilute excess flow to go through a rack and into Long Island Sound. The excess flow is chlorinated during the bathing season.



The Boiler with Modulated Controls to Supplement Sludge Gas with City Gas to Maintain the Proper Temperature of Water in the Digester Coils and for Heating the Building in Winter

On entering the plant the sewage flows through a 36-inch Chicago comminutor, there being a rack and bypass to take care of the sewage when the comminutor is shut down for any reason. The sewage flows to four covered rectangular sedimentation tanks equipped with Link-Belt Straight-line sludge collectors. These tanks are equipped with a novel device for removing the scum. A thin plate at the effluent end is lowered by a hand wheel so that it is about two inches below the surface of the sewage in the tank. The Straight-line scrapers bring the scum over to within 5 feet of the effluent end of the tank, so that when the plate is lowered and the level of the water quickly dropped in the scum trough, the collected scum on the surface is pulled from the top of the tank and carried to the scum pit. Another novel feature is that some of the covers over the various operating mechanisms are of sheet aluminum, making them easy to lift because of the light weight of this metal.

Two Chicago Scrupeller sludge pumps in the basement of a storage building take the sludge from the sludge hoppers in the settling tanks and deliver it to the digester. A third pump in the same basement takes suction from the settled sewage and delivers this liquid to flush yard hydrants where hoses are connected for cleaning channels, washing down the basins, and watering the lawns. In the same building is a Builders Iron Foundry venturi meter measuring the sewage flow. Flow readings are transmitted electrically to a recorder in the administration building.

Chlorination

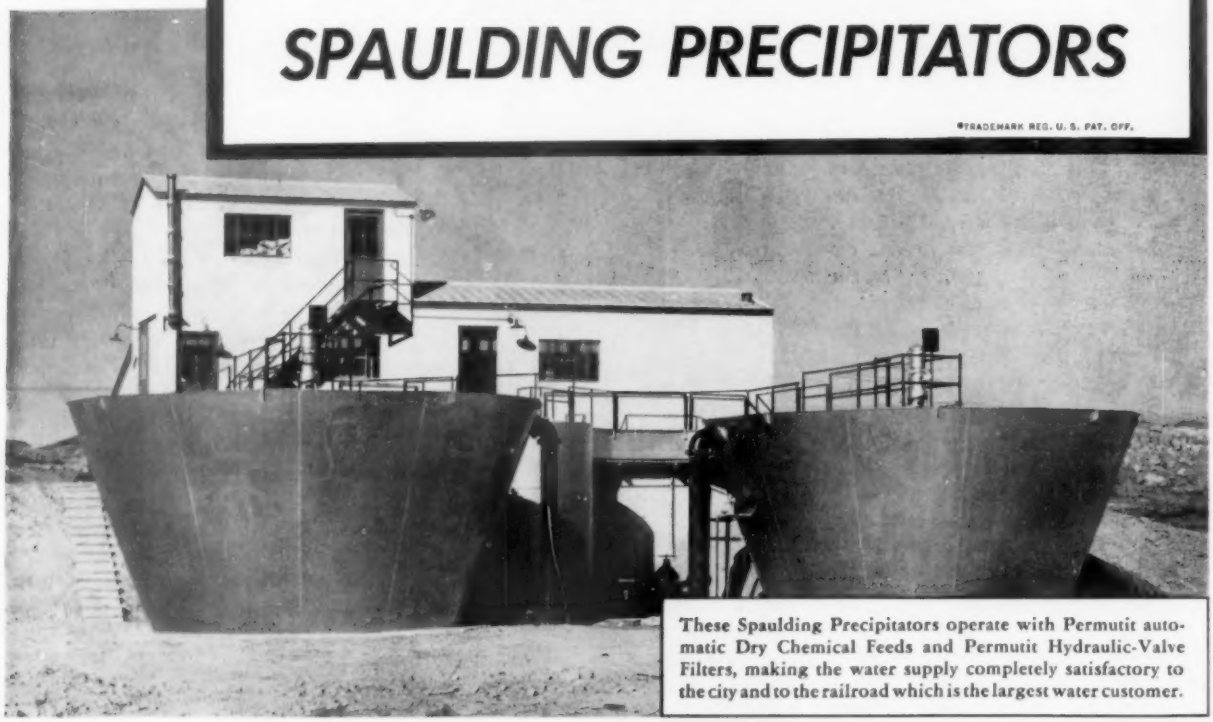
The effluent from the sedimentation tanks, after flowing through the venturi meter, is chlorinated and flows through the outfall sewer and multiple submerged outlets into Long Island Sound. The sewage is pre-chlorinated and post-chlorinated.

The two Wallace & Tiernan vacuum feed chlorinators are operated with settled sewage which is pumped automatically to a pressure tank of 1,000 gallons capacity where the water-level is automatically controlled and pressure maintained by a small air compressor. When the liquid in the tank falls below a desired level, the settled sewage pump mentioned above is started by a pressure switch and fills the tank. The reason for the use of settled sewage for flushing

(*Continued on page 81*)

Gallup, N. M., solves Hard-Water Problem with "PERMUTIT"* SPAULDING PRECIPITATORS

*TRADEMARK REG. U. S. PAT. OFF.



These Spaulding Precipitators operate with Permutit automatic Dry Chemical Feeds and Permutit Hydraulic-Valve Filters, making the water supply completely satisfactory to the city and to the railroad which is the largest water customer.

Million-Gallon Units Soften 23-Grain Water

Gallup, New Mexico, is just one of the many up-to-date municipalities that have installed Spaulding Precipitators within the last two years. The trend is to this new type of Cold Lime Treatment because of its unusual ease and economy of operation and its flexibility of design.

No matter what your water conditioning problem, Permutit, world's largest makers of water conditioning equipment, can solve it economically. You'll find our coast-to-coast staff of engineers will be glad to give full co-operation.

For further information and free booklets, write The Permutit Company, Dept. G3, 330 West 42nd Street, New York.

PERMUTIT WATER CONDITIONING HEADQUARTERS

Mention THE AMERICAN CITY—it helps.

Is the City Planning Commission Meeting Today's Problems?

*Comments and Recommendations Based on a Recent Field Study by the Author**

By Robert A. Walker
Associate Administrative Analyst, Office of Budget and Finance, United States Department of Agriculture

TWO years ago the Urbanism Committee of the National Resources Committee, under the chairmanship of Clarence A. Dykstra, published the results of a far-reaching study of modern urban problems. One of the more important parts of that committee's report, "Our Cities: Their Role in the National Economy," was a statement of the emerging problems which American cities are facing today and with which city officials are going to have to deal for an indefinite period. Stated briefly, these problems are:

1. Basic inequalities of income and wealth within the urban community.
2. Lack of articulation among various industries within the community.
3. Rapid obsolescence of physical plan and plant.
4. Disruption of the national urban pattern brought about by competing forms of transportation.
5. Uncontrolled subdivision and real estate speculation.
6. Burdensome proportion of substandard housing.
7. Endangered public health, particularly in blighted areas and among low-income groups.
8. Disorganizing effects of ethnic, religious, and cultural heterogeneity.
9. Inadequacy of adult, vocational, and higher educational programs.
10. Prevalence of juvenile delinquency, organized crime, and commercial rackets.
11. Inadequacy and irrationality of existing systems of urban public finance.
12. Adjustment of the legal position and powers of the city.
13. Difficulties arising from the overlapping of independent governmental units.
14. Persistence in some cities of graft and corruption.

The above are doubly worth considering at the present time. The national defense program is already creating new problems of industrial location and low-cost housing. Termination of the defense program and post-war readjustment, when it comes, will greatly accentuate certain other of these problems.

Planning to Rectify Unfavorable Conditions

Any city official reflecting for a moment on these problems as they appear in his own community will observe their interrelationship. An attack on substandard housing brings sharply to the fore such matters as inequality of income, urban blight, public health costs, juvenile delinquency, and the inadequacy of existing sources of finance. The administration of such old-line activities as police and fire protection hinges on the location of deteriorated sections of the city, the areas of greatest cultural heterogeneity, the distribution of industry, and the difficulties engendered by overlapping governmental units. In the provision of all services, municipalities are harassed by the "inadequacy and irrationality of existing systems of urban public finance." In other words, it is no longer possible to treat urban problems and the activities of urban governments individually. The only alternative is to view the city as a social and economic unit; to treat public services as interrelated parts of a single process. This is but to say that cities must plan their numerous activities with the objective of ultimately rectifying some of the conditions which give rise to their most pressing problems.

The almost complete failure of cities to plan in the past has placed a tremendous burden of social and physical regeneration upon urban governments. But it is practically impossible for city officials, pressed for decisions upon specific questions from day to day, to give proper attention to the long-run implications of their actions. They cannot, without help, prepare the plan or program for the future which is essential if their daily decisions are ultimately to add up to a substantially better city. The needed help should take the form of trained persons who can devote their energies primarily to study, thought, and planning. These persons should be organized as a separately staffed planning agency to prevent their being drawn into the milieu of administrative pressures.

Planning has been widely accepted in principle in American cities. Since the turn of the century, between 1,000 and 1,500 city planning commissions have been appointed, and some 36 states have passed city planning enabling acts. In practically every city, planning has been actively supported at one time or another by public-spirited citizens, civic organizations, and far-sighted public officials. This support has generally culminated in the appointment of a planning commission after which it usually dies away in the expectation that the commission will carry on the function. Unfortunately, this expectation has seldom been realized. The great majority of planning commissions are now inactive and the planning function is exercised haphazardly, if at all, in most cities.

In the face of a greater need than

* The full report, entitled "The Planning Function in Urban Government," will be published this month by the University of Chicago Press.

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ever before for intelligent city planning, the planning commissions are the neglected stepchildren of municipal government. Why? The remainder of this article will be devoted to indicating briefly what the author believes to be the principal contributing factors, after an intensive study of the work of these commissions in the larger cities of the United States.

The first source of difficulty for our present city planning agencies has been the narrow view which they have taken of the planning function. The organized planning movement in a sense got off on the wrong foot with a strong emphasis on the "city beautiful," the odor of which still lingers in the nostrils of many city officials. The planning commissions themselves have in many cases never outgrown the initial stress put on civic centers, streets, and parks in early city plans. Even with the advent of zoning, which has absorbed a lion's share of the time and energy of most active planning commissions, city planning has been almost exclusively concerned with the physical pattern of the city and with public improvements. With a few important exceptions, the commissions have continued to concentrate on this side of planning despite the growing concern of municipal governments with health and welfare activities, public relief, and other of the problems set forth by the Urbanism Committee. This has meant that the work carried on by the planning commissions has appeared less and less vital to city officials absorbed in administering and finding means for financing new public services. The inevitable result has been drastic reduction and widespread elimination of budgets for city planning.

Planning as an Intermittent or Continuing Activity

Another factor contributing to the present plight of the planning commissions has been their heavy reliance on consultants. It has been standard practice for city planning agencies to contract with one or more professional planning consultants to prepare within a limited period a city plan or a special report on some aspect of planning. Without in any way questioning the technical quality of the reports prepared in this manner, there is every reason to believe that intermittent contract planning has not been effective in establishing planning as a continuing activity. Both public officials and civic groups have tended to regard plans and reports prepared in this fashion as the end product of the planning process. Interest is centered in a single report. When it is completed citizen interest drops off, and the attitude of responsible officials is reflected in the comment: "We have a plan. Why spend more money?" Hence the relatively large sum appropriated to retain the consultant is usually sharply curtailed or eliminated altogether after he submits his report. For proof of this fact we may note that the survey of city and county planning carried on by the National Resources Committee in 1936 revealed that only 64 of the 933 official city planning commissions which it reported upon had a budget of $1,500 or more. This is scarcely enough to employ one full-time man.

The fallacy inherent in this kind of planning is apparent when we realize that planning is in the first instance the responsibility of the officials charged with formulating and carrying out governmental policy. They must plan their operations from month to month and year to year. The function of the planning agency is to assist them in handling this aspect of their work. Planning in this sense is clearly a continuing function, and the planning agency cannot serve its purpose adequately if it confines its major efforts to intermittently contracting with an outside consultant to prepare a plan report. One fact brought out by the study was that officials do not often refer to a consultant-made plan, although they will consult informally with a planner or planning engineer who is one of the city's employees.

Even in those cities where the commission has a permanent staff, planning has suffered from the lack of one responsible head to whom other officials can turn for this kind of informal consultation on current questions. The planning engineer, or resident planner, functions in this capacity in some cities, but in many cases he does not have the salary and status which are necessary to make mayors, managers, or department heads take his advice seriously. Another difficulty with present planning staffs, where they exist, has been the fact that they are composed almost entirely of persons trained in engineering, drafting, and the architectural professions. Persons trained in economics, sociology, administration, and public finance are conspicuously lacking. This means that the planning commissions are not equipped for creative work in the newer fields of municipal activity.

Accepted Practice Ineffective

The final, and perhaps the most important, reason to be considered here for the failure of the planning commission to obtain general recognition as a necessary government agency is its present organization. Accepted practice has been to set up the planning commission as a semi-independent, unpaid citizen board of from five to eleven members. Members are given long, overlapping terms to keep them free from "political" control. On the basis of his observations, the writer is of the opinion that the autonomy and the amateur character of the commissions operate against the best interest of planning. Many commissions have taken the view that their function is to advocate policies and projects which they favor, irrespective of the views of incumbent officials. This has been a source of friction and antagonism interfering with the wholehearted acceptance of the planning function. At the same time, public officials do not tend to value highly the advice of an unpaid, part-time board. This has meant simply that they do not seek the counsel of the commissions on innumerable matters seriously affecting the future development of the community. The independent status of the commissions has also thwarted in many cases the cultivation of easy, informal channels of communication with important officials—a deficiency which is only rarely and partially compensated for by having certain officials serve on the commissions as ex officio members.

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with the members of planning commissions, the writer is also strongly of the opinion that, as a group, they either cannot or do not devote enough time to planning to grasp fully its meaning and purpose. There are, of course, outstanding exceptions, but these do not suffice. If planning is to embrace the range of municipal activity, it must be carried on by men who can devote their full time and energies to it. This has been recognized in New York City, where a full-time paid commission has been functioning for the past three years.

Single-Headed Department Recommended

But there is reason to believe that planning might be carried on as effectively under the direction of a single responsible department head as under a board or commission. Planning does not take place in a vacuum. If it is to be worth while, it must be taken seriously by city officials and administrators. In effect, a city planning agency should aid the chief executive in performing his task of investigating, thinking, and planning before he acts. As the one focal point of current business and departmental responsibility, the chief executive more than any other one official is responsible for taking an over-all view of urban government, for coordinating its various activities, and for planning an integrated future program. Consequently, the planning agency will be most likely to perform its function satisfactorily if it is made immediately responsible to him. The mutual confidence which this relationship presupposes has seldom been realized in the past; and the failure of most planning agencies to find an active role in city government is undoubtedly due to the emphasis which has been placed upon guarantees of independence from political influence as distinguished from a more significant emphasis upon usefulness and cooperation. Recognizing that urban politics has often been such as to justify setting up an independent citizen planning commission, we must today realize that the trend has been toward more efficient and more responsible local government. There is every indication that this important trend will continue.

Many objections will be raised to the suggestion that the independent planning commission be replaced by a single-headed department attached to the executive office. But we are faced, on the one hand, by a pressing need for planning in city government and, on the other, by planning agencies most of which are doing little or no planning. The conclusion seems unavoidable that a new kind of planning agency is needed to meet today's problems, a research and advisory agency set up in close working relationship to city officials. The demands on city government may be expected to become more insistent within the next few years. Drastic action in preparing to meet these pressures is as necessary in local as in national affairs.

Modern Police Telephone-Telegraph in Houston

By CAPTAIN L. D. MORRISON
Police Department, Houston, Texas

A COMPLETE and adequate system of police communications must provide not only facilities whereby one member of the department can talk with another, but also secrecy in such communications and a means of rapidly establishing contacts, especially with patrolmen while covering their patrol routes. Further, an adequate communicating system should provide some unimpeachable means for checking patrol delinquencies.

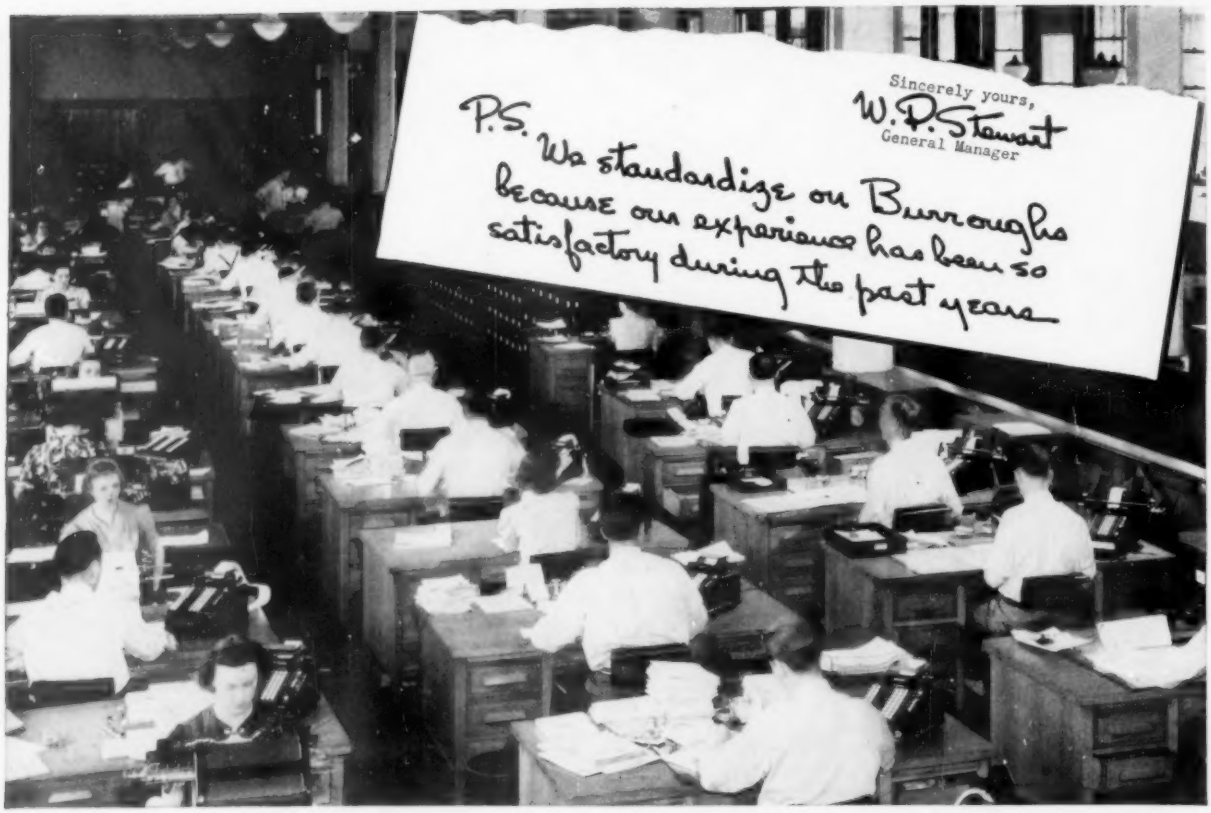
The Houston Police Department uses both the police telephone-telegraph system and the police-radio system as a unit of communication having the flexible features demanded by present policing methods. The traffic handled by our police telephone-telegraph system has increased steadily from year to year. Recently, it became necessary to enlarge our central control unit and make other improvements to handle this increase.

The first Houston telephone-telegraph system was installed by the Gamewell Co. many years ago. Today, it consists of a central control unit located in the fire-alarm headquarters: 75 patrol boxes, 46 special signal lights, 46 special signal bells, and a number of official telephones, all connected by some 50 miles of open-line construction and 15 miles of underground cable.

The central-control unit, together with three six-circuit, paper-tape recording devices, provides for the establishment of telephone communications and the reception of routine "on duty" and "emergency" telegraph signals from patrolmen reporting over any one of 18 special patrol circuits. It also provides means by which these patrolmen may be summoned to a patrol box through the transmission of special signals to the signal lights and bells located near patrol boxes; 18 circuits are used for this purpose. Complete telephone service can be rendered to police officials and any city agency that may be connected with police administration.

In addition to 75 patrolmen who report over this system each day, parking-meter service men, members of the Electrical Department, officers of the Fire Department, and many special officers use the police telephone facilities. Although at present the system is still undergoing alterations, and a full use of the patrol-box features is not possi-

Only a P.S.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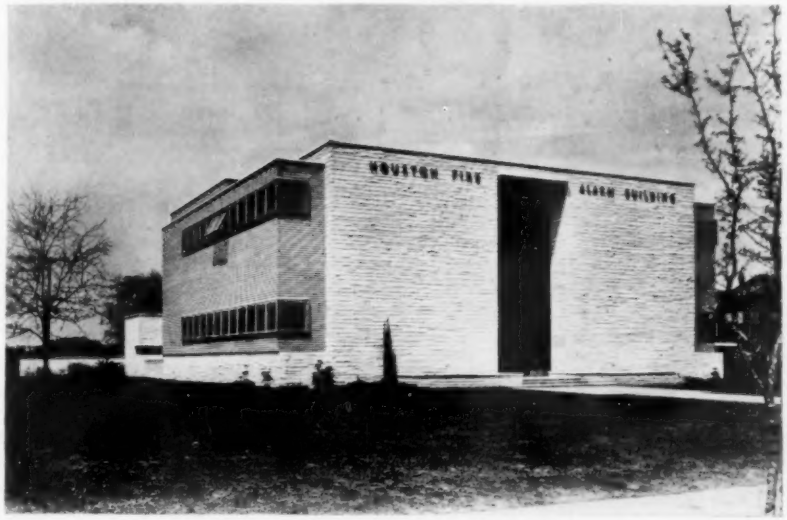

The mausoleum aloofness and calm of a modern fire-alarm central station, adds safety to the instantaneous communication of alarms to the fire apparatus

ble, the ultimate facilities to be made available at each patrol box will permit the transmission of emergency, report, and telephone calls.

The emergency or "wagon" call indicating the need of immediate assistance will be given by merely inserting and turning a patrolmen's or citizen's key in the "emergency" keyhole provided in the outer door of each patrol box. As a result of this act, a distinctive code signal indicating the box operated will be received, recorded, and audibly and visibly announced at the central control unit within six seconds after the initial operation of the key. The recorded signal will be in the form of perforations in a traveling paper tape, and the exact time of reception will be automatically noted.

Opening the outer door of a patrol box will give access to telephone facilities and an operating lever for the purpose of transmitting routine report calls. The report call will be given by simply pulling the operating lever, thus causing the code number of the box to be transmitted to the central-control unit, where it will be recorded and dated. No distinctive audible and visible announcement will be rendered, as is the case when an emergency call is received. The report calls will be made at prescribed intervals and at the same time that patrolmen announce their presence at a box by telephone. This is now required hourly.

The telephone service provided at each patrol box is completely inter-communicative. Two-way telephone communications may be established between any box and the central-control unit, between any box and the official telephone, between any box and any public service telephone, and between any two boxes. Facilities at the central-control unit will permit three such communications to be carried on simultaneously.

Provisions for the future expansion of this system have been made, and we anticipate the addition of six patrol-box circuits and six special-signal circuits, which will provide ample capacity for the department's need in the near future.

We look forward to a time when there will be a patrol box and associated signal equipment at every intersection within the downtown area. Consideration may also be given to the extension of telephone-telegraph facilities for the use of the patrolmen assigned to mobile units, especially throughout the residential areas. If the system is expanded in this direction, it will be primarily for the purpose of assuring that these areas are patrolled in the manner prescribed. Routine telegraphic reports will probably be required hourly from patrol boxes located at extreme corners and border areas of each cruising area. There is often a need for secretive communication between mobile units and headquarters, and patrol boxes, if extended to the residential areas, would also prove valuable where desired.

We believe that the telephone-telegraph system and the radio system are not, broadly speaking, separate and independent systems. Each is an indispensable element having its own sphere of usefulness in a complete system of police communications, and both together provide the police department with a most effective instrument for the maintenance of public safety.

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Liquor Control and National Defense

Shortcomings in State and Municipal Policies and Administration Methods

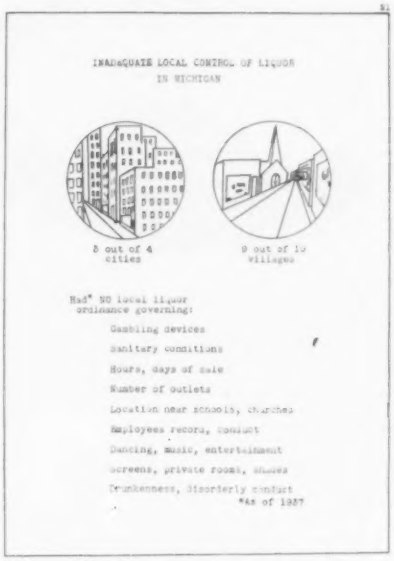
By MURTON PEER
Secretary,
Michigan Liquor Study Committee

LIQUOR headaches are beginning to pound for city officials, and their own hard work, not pills, must supply the remedy. In fact, municipal authorities are due for several headaches, growing out of liquor problems accentuated by the nation's defense preparations—unless prevention is applied at once.

Uncle Sam has granted contracts for 10 of the 16 billions appropriated by Congress for production of defense equipment and materials. In the great industrial and commercial centers, as well as feeder communities with a single factory, men are going back to work or are getting extra hours and larger paychecks, and they are spending more freely. Part of that spending, during the hours off work, is going for alcoholic beverages in taverns, dance halls, fraternal club rooms, restaurants and bars—all of which may blow the lid off the liquor traffic, unless cities help counties and states to tighten the clamps.

Millions in municipal revenues are at stake. In the first place, if "anything goes" as to entertainment and drinking, city budgets may be disrupted by additional requirements for law enforcement. Then, if developments arouse public disapproval, Prohibitionists may force local option elections to ban all or part of the liquor traffic, and thus reduce local government revenues from license fees, taxation or state monopoly retail profits.

In thousands of cities where local option elections have been held in the seven years since repeal of national Prohibition, officials know that liquor is banished with a one-two punch attack. The first blow is struck when apathy or negligence allows regulation to lapse. The polishing-off blow falls when citizens vote their resentment. It now behooves city officials not to lay their communities wide open to these thrusts during the boom-times inspired by defense spending.



Michigan's Experience

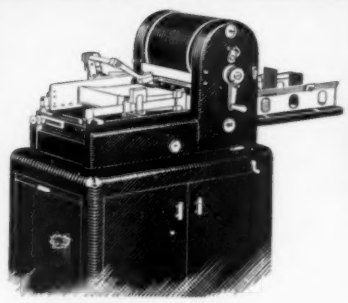
Michigan is experiencing the first of such problems. Typical of other states for its combination of industrial and agricultural interests, Michigan has heard the common criticisms of liquor-retailing conditions, particularly that drinking places are too numerous. Now authorities report a sharp decline in the number of liquor retailers asking permission to transfer their business and license to a new owner. Such transfers have cluttered up liquor law enforcement procedure in past years, but in recent weeks the license-holders must have read about the quarter-billion to be spent on defense contracts in Michigan communities, and have decided to await their share.

Linked to this trend is the increased pressure for licenses in cities and rural sections adjacent to Michigan's largest army training center. Here thousands of young men are being quartered, and thousands of workmen have been imported to construct facilities for additional thousands of trainees. In press publicity and conferences with officials, our Liquor Study Committee suggested doing something to head off undesirable developments. Newspapers and official groups took up the issue and definite action has resulted, with committees of specialists assigned to prepare proper housing and social conditions in the training area.

Besides the defense training area, thousands of communities to which trainees will return after completion of duties will suffer damage to health, social and economic standards unless action at key points prevents it. Such points dot the entire country. Added to the armed forces in training are thousands being taught mechanical trades for industrial jobs. Brought to central training points, they are to be assigned work wherever needed. These developments are now taking form, and they challenge city officials to deal forcefully with them.

Cities are none too well prepared to handle such matters, officials themselves admit, in many instances. This is what our Liquor Study Committee found in its past year's work. Our group, composed of persons who fought for repeal of Prohibition, sought the reasons for the growing criticism against state and local government control of liquor. Starting just as Europe's armed camps marched, our study revealed circumstances which in recent months of speeded-up defense work have taken on new significance.

First Assistant to Municipal Officers



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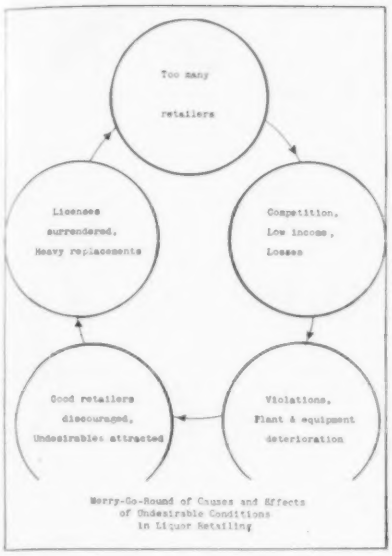


Merry-Go-Round of Causes and Effects of Undesirable Conditions in Liquor Retailing

Where Municipal Action Falls Short

Some problems which, our committee found, only a minority of communities were successfully dealing with include: minimum number of licenses needed; closing hours; Sunday sales; selling to minors and drunken persons; qualifications for licensees and employees; minimum specifications for retail premises and equipment; distance to schools, churches, hospitals and other public buildings; frequency of routine inspections by officials; severity of discipline for violations; revenue sources; and local responsibility as compared with state duties.

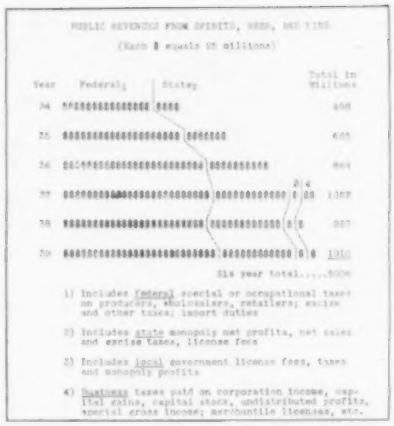
Regarding these, most communities have policies that are vague and subject to frequent change, enforcement is spotty, discipline lacks uniformity, records are not regularly kept in a form comparable with those of other cities, and seldom do officials bother to analyze the quality of their administrative techniques. According to persons in touch with liquor-control affairs in all parts of the country, such conditions make Michigan communities no better nor worse off than those in other states.

What caused this condition? Lack of experience has been a big drag on liquor-control progress. Prohibition was effective for thirteen years. When repeal came, policies on how much to tax liquor, how many places to license, what restrictions to put on drinking—these had to be rule-of-thumb regulations, adopted with the hope that the trial process would not show too much error. Lack of leadership by the Federal Government, and by the industry producing and distributing alcoholic beverages, was a handicap. States, under the repeal amendment, were given sole responsibility for affairs within their boundaries. The rush to supply the demand for legal drinks took up the attention of producers, wholesalers and retailers.

The anxiety to get rid of the bootleg régime and give the long-awaited national prosperity a boost was a widespread attitude that caused issuance of licenses with slight examination of qualifications or inquiry into the number of outlets the community would require. Officials looked at liquor's legalization for its revenue benefits first, and social benefits second, if at all, and once the system was installed, they went looking for other revenues to cover their depression-born needs and to replace the narrowing local tax base.

A Dangerous Attitude

"I stay out of liquor-control affairs as much as possible" was a statement our committee frequently heard from city officials, including some of the best in their field. That attitude explains certain shortcomings in liquor-control policies and operating methods. If it persists in the face of critical conditions, it will endanger the flow of public revenues and other economic and social benefits from a great new industry developed by public demand.


PUBLIC REVENUES FROM SPIRITS, BEER, AND WINE
(Each $ equals 25 millions)
Year
Federal1
State2
Total in Millions
34
35
36
37
38
39
1939 total.....5006
1) Includes federal special or occupational taxes on producers, wholesalers, retailers; excise and other taxes; import duties
2) Includes state monopoly net profits, net sales and excise taxes, license fees
3) Includes local government license fees, taxes and monopoly profits
4) Business taxes paid on corporation income, capital gains, capital stock, undistributed profits, special gross income; merchantile licenses, etc.

The $5,000,000,000 in revenue that Federal, state and municipal governments derived from the alcoholic beverage industry from 1934 through 1939 cannot be overlooked. The thousands of communities where local option, in protest against inferior liquor control, canceled drinking privileges and the operation of this industry, testify what effects an attitude of complacency and apathy have had in ordinary times in the past—and the future promises no ordinary times.

See report, "Liquor Control—or Chaos," published by Michigan Liquor Study Committee, 6432 Cass Avenue, Detroit, Mich., 98 pp., 38 illustrations, lithoprinted; copyrighted. For availability, write the Committee.

Roadside Zoning Approved by A. A. A.

A ROADSIDE Zoning Legislative Guide, prepared by the Roadside Development and Control Committee of the American Automobile Association, was endorsed by the Councilors of the A.A.A. at their annual meeting in Washington, D. C., last month. The principal provisions of the proposed legislation, the text of which occupies 23 mimeographed pages, and with which the Committee submitted a 22-page "Study of the Problem of Roadside Development and Control," may be briefly summarized as follows:

1. The State Highway Commission is authorized to establish highway protective strips not more than 1,000 feet wide on each side of the highway. (In the event that state highways are administered by a single person rather than by a commission, provision is made for the establishment of a roadside zoning commission). After public hearings:

(a) The Commission is authorized to separate the strips into districts depending on a type of use, such as residential, roadside service, business, industry;

(b) The Commission is authorized to regulate location and other characteristics and the uses of buildings and structures and land within the highway protective strips.

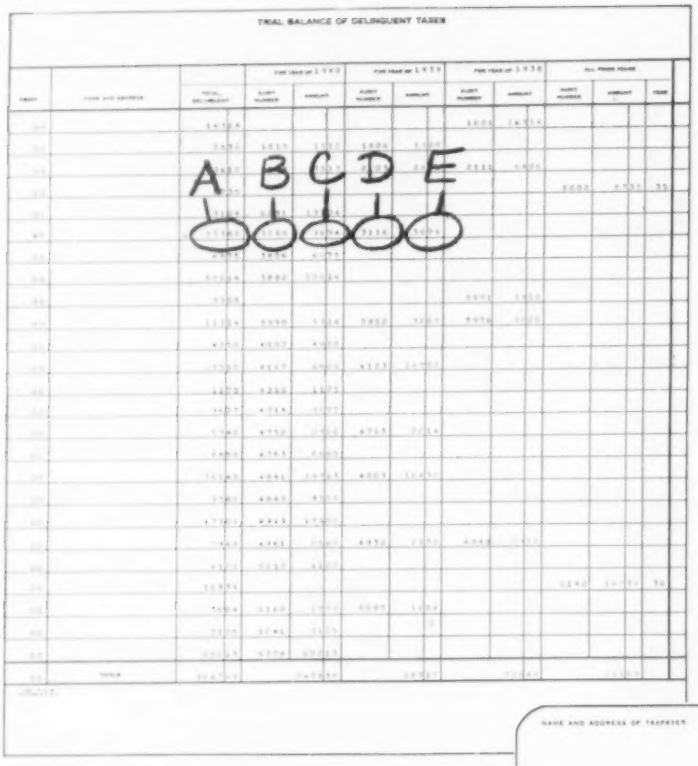
2. The Commission's zoning action is to be taken on the basis of plans drawn up by the State Planning Board.

3. Public hearing is to be held on any application for special exception or variance from zoning regulations.

4. Any person aggrieved by the Commission's action may appeal to the courts.

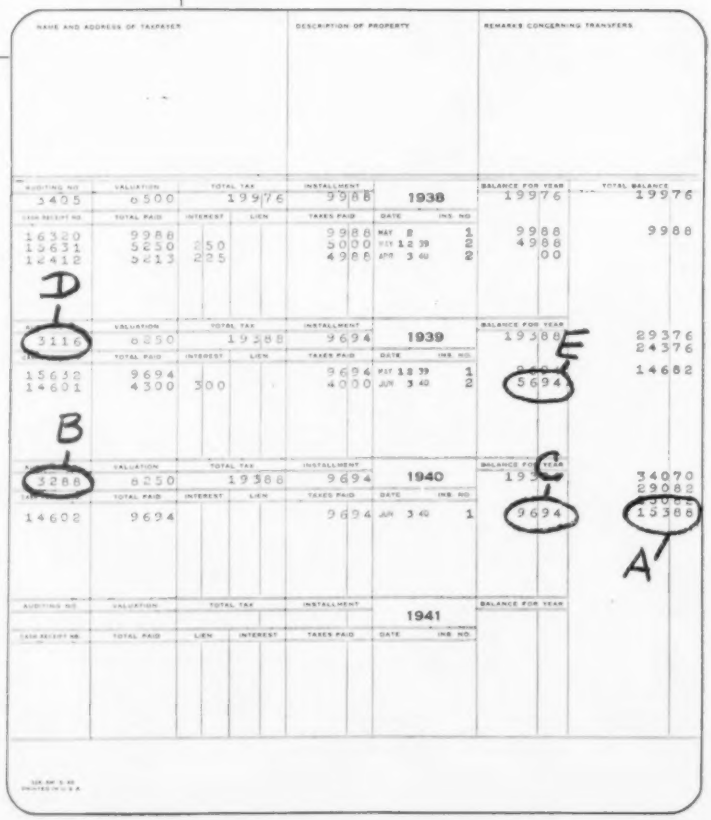
—In preparing its report and text of the proposed state legislation, the Committee retained the expert services of Hugh R. Pomeroy, Director of the Virginia State Planning Board.

Printed copies of the above-mentioned documents will be available from the American Automobile Association's headquarters, Pennsylvania Avenue and 17th Street, Washington, D. C.



A B C's of Delinquent Tax Collection

(*From "SMASH"*)



Every delinquent account in the above up-to-date total Trial Balance of Delinquent Accounts can be instantly analysed on the account's individual tax ledger card shown at the right.

Write at ONCE for a free copy of SMASH, the new brochure on Tax Accounting.

Underwood Elliott Fisher Co.

One Park Avenue **New York**

Des Moines Sewage Works

(*Continued from page 44*)

depth digestion tanks, is connected with the basement of the pump-house by a concrete tunnel, making it unnecessary for operators to go outdoors to reach this important unit in severe winter weather. Three of the digestion tanks are equipped with PFT floating covers, and the fourth with a 65,000-cubic-foot gas holder with a rising cover.

The 8-inch primary sludge line is carried through the underground service tunnel, and it is painted brown, together with all other sludge lines in the plant. Sludge-gas lines are painted orange, hot-water lines are painted red, and supernatant liquor lines are painted black.

On the basement floor of the digester control house is a sludge sampling sink and a Marlow sludge pump, which can be used for transferring sludge from any one of the tanks to any other. For ease of construction in the large amount of piping in the digester control house, stub pipes were used in all tank connections, and then the outside pipes were connected to the stubs with Dresser couplings. Walworth lubricated plug-valves are used throughout on all sludge and gas lines to permit ease of operation and to insure against sticking valves.

On the second floor of the digester control house are four Root-Connersville meters to measure the gas from each digester, and also a supernatant sampling basin for each digester. An American Gas Products heater, equipped with an Emco meter and PFT flame traps, is installed on the second floor of this building to heat the water for the coils in the sludge-digestion tanks to insure the optimum temperature for rapid digestion of the raw sludge. Each digestion tank has three supernatant draw-offs for sampling. The supernatant liquor is run back to the raw sewage line at the entrance to the pump-house wet pit.

Use of Digester Gas

In addition to burning the digester gas in two heaters, one for heating the pump-house and the other for heating the sludge-digestion tanks, an agreement has been made with the Des Moines Gas Co. to purchase digester gas by thermal units from the plant. To make this possible, the gas, which has a pressure of only 3 to 5 inches of water, is boosted to a pressure of 10 pounds by a constant-speed Sutorbilt pump, driven by an Allis-Chalmers motor through a V-belt drive, and another similar pump and motor connected through a Reeves variable drive.

In the transformer room of the pump-house, foundations have been installed for a future possible installation of two 300-hp sludge-gas engines with the wiring in place. If these two engines are installed with generators, it will be possible for the plant to make all the necessary electricity for the operation of the plant, including power and lighting.

Sludge Drying Beds and Disposal

The digested sludge from the four digesters flows by gravity to fourteen open drying beds, measuring 40 x 285 feet with underdrains 18 inches below the surface, covered with 6 inches of coarse gravel and 1 foot of sand. The 200,000 square feet of sludge beds is believed able to take care of drying all digested sludge at the plant during the proper seasons. A Royer sludge disintegrator has been installed for grinding the dried sludge for use in the city parks and the cemetery, and by other city departments as required for lanes and parkways.

The new sewage-treatment plant at Des Moines was started as a WPA project in December, 1937. The building superstructure, pump and power house, and the sludge pump-house were constructed as a PWA project with a 45 per cent grant in conjunction with twelve other PWA contracts. The 45 per cent grant of PWA amounted to $84,600, the WPA contribution $725,000; and the city's contribution in materials to WPA and as its share of the 55 per cent PWA contract was about $800,000. The plant was built under the direction of John MacVicar, Superintendent of Streets, and was designed by John Tippee, City Engineer.

Defense Housing Program

"HOUSING for Defense—A Review of the Role of Housing in Relation to America's Defense," a publication just put out by the Twentieth Century Fund (see p. 115), contains a recommended policy, and program of action, for defense housing.

Probably the most basic finding of the survey is that private industry has the capacity to provide the major part of the defense housing needs, but an immediate plan of action is necessary if we are to avoid the delays and mistakes that seriously crippled America's war effort in 1917-18.

For today's needs, the Fund's Committee recommends that defense housing should be of permanent, not temporary, construction; and it should be concentrated in the low-cost field. Housing which does not meet minimum standards "can have little advantage either in cost or time of erection," and too often "leaves an aftermath of blight and slums." The Committee says the great need of the present emergency is for low-priced housing, which meets both normal and emergency needs, and therefore offers to investors "safety in financial operations."

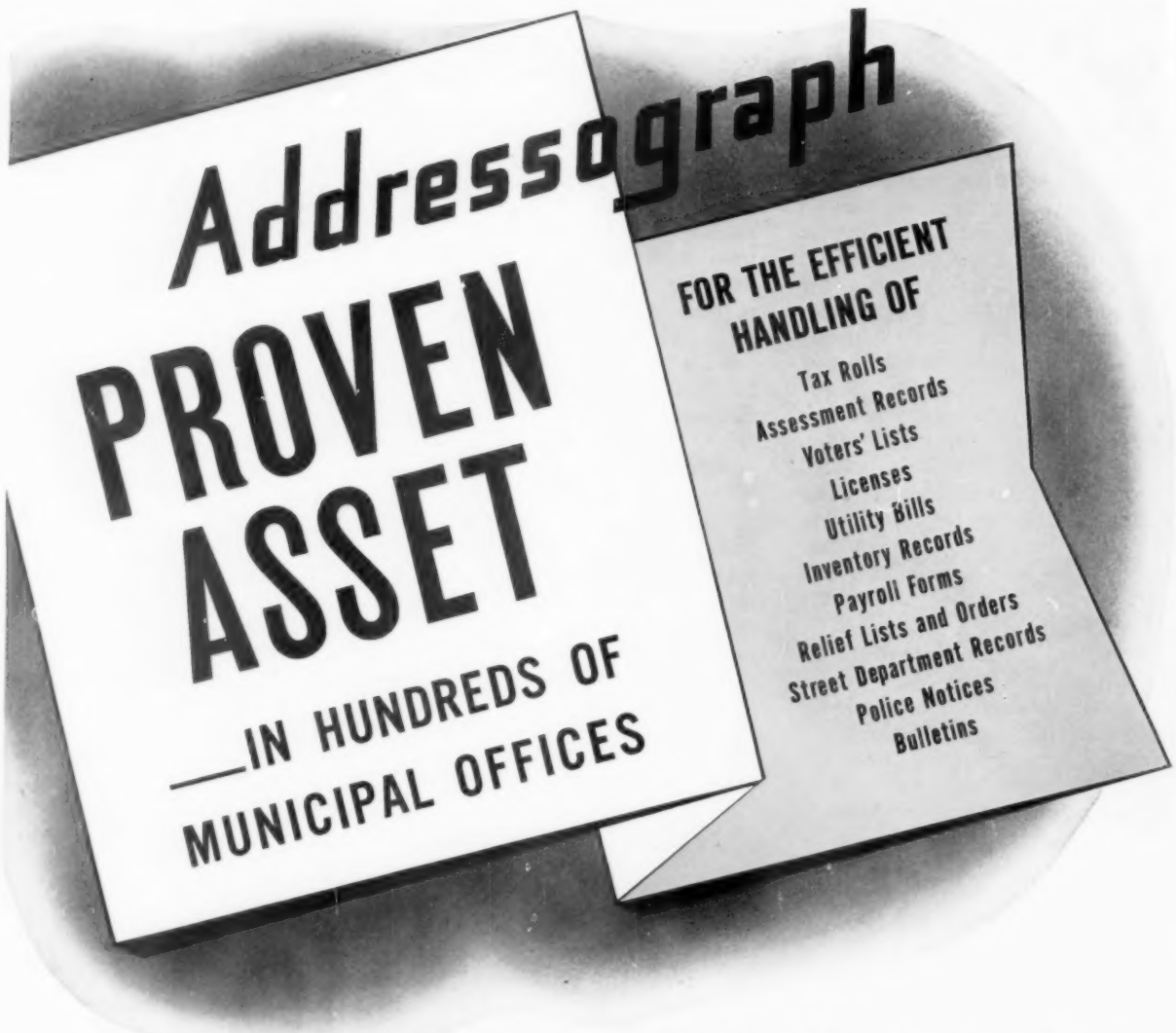
Cities and towns can help to meet defense housing needs by pushing construction now under way and providing means to make the fullest possible use of existing housing facilities, including repair and modernization of older structures, registry of vacant rooms and houses, and extension and improvement of transportation systems. The Committee recommends:

a. Revising zoning ordinances to make available, exclusively for housing, surplus lands now designated, but not required, for commercial and industrial use.

b. Instituting means for quieting tax titles and for liberalizing the powers of municipalities to acquire, lease, or dispose of lands; and for reassembling parcels in dormant or abandoned subdivisions.

c. Developing land-control regulations to facilitate stable neighborhoods of low-cost dwellings.

The five main objectives of a policy of selective location are set forth as follows: to avoid congestion of population; to utilize fully but not over-expand existing facilities; to fit productive expansion to the community; and to minimize the increase of government functions.



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Tar Macadam Sidewalks, Middleton, Mass.

IN SOME sections replacing old sidewalks of stone, artificial stone and even grass, and in other places putting sidewalks where none existed before, the town of Middleton, in northeastern Massachusetts, has acquired 1.5 miles of new sidewalks by means of WPA projects sponsored by the town. All the walks are given good foundation to insure drainage of water from beneath the walks so that they will not be destroyed by frost.

Delivering and Hand-Spreading the Tar Macadam Mix on the Rolled Base

The sidewalks are carefully laid out for grade and line, and then forms of 7/8 x 3-inch lumber are staked at both sides every 4 to 5 feet. Where access drives cross the sidewalks, the sidewalk material is carried down the drive to the gutter, using the same type of forms at the side. The walks, which are uniformly 5 feet wide, have a gravel base from 4 to 6 inches thick rolled to firmness by a Toro motorized roller rented from Yemma Brothers, contractors, of Haverhill, Mass.

The paving material used is Barrett Co., Type D mix of 3/8-inch stone mixed and laid cold. The material is spread about 3 inches thick, loose, and rolled to a firm 2 1/2-inch thick layer.

The crew used for this work in Middleton is composed of an assistant engineer in charge, one foreman, one timekeeper, one carpenter to superintend the placing of the forms, two rakers and eleven laborers, who shovel the material from the trucks and place it between the forms for the rakers to smooth out, perform similar work in the placing of the gravel sub-base and assist the carpenter with the forms. Progress on this work has been unusually good, with an average of 400 feet of sidewalks laid per 8-hour working day by the 17-man crew. Delivery of the tar mix was expedited by the use of a fleet of local trucks hauling the material from The Barrett Company plant at Lynn, Mass.

The project was superintended by Clyde L. Hood, as Assistant Engineer in Charge.

Rolling the Gravel Base for a New Sidewalk in Middleton, Mass.

Using Sludge and City Gas

(Continued from page 65)

and for operating the chlorinators is that the cost of water is fairly high in the community, making this economy worth while. However, since a power failure at the plant would put the chlorinator water supply out of commission, a line is carried to the chlorinator from the local water company mains. To prevent the possibility of contamination of the domestic water supply with the chlorinated sewage effluent, the union which is used to connect the city water line to the chlorinators is left open.

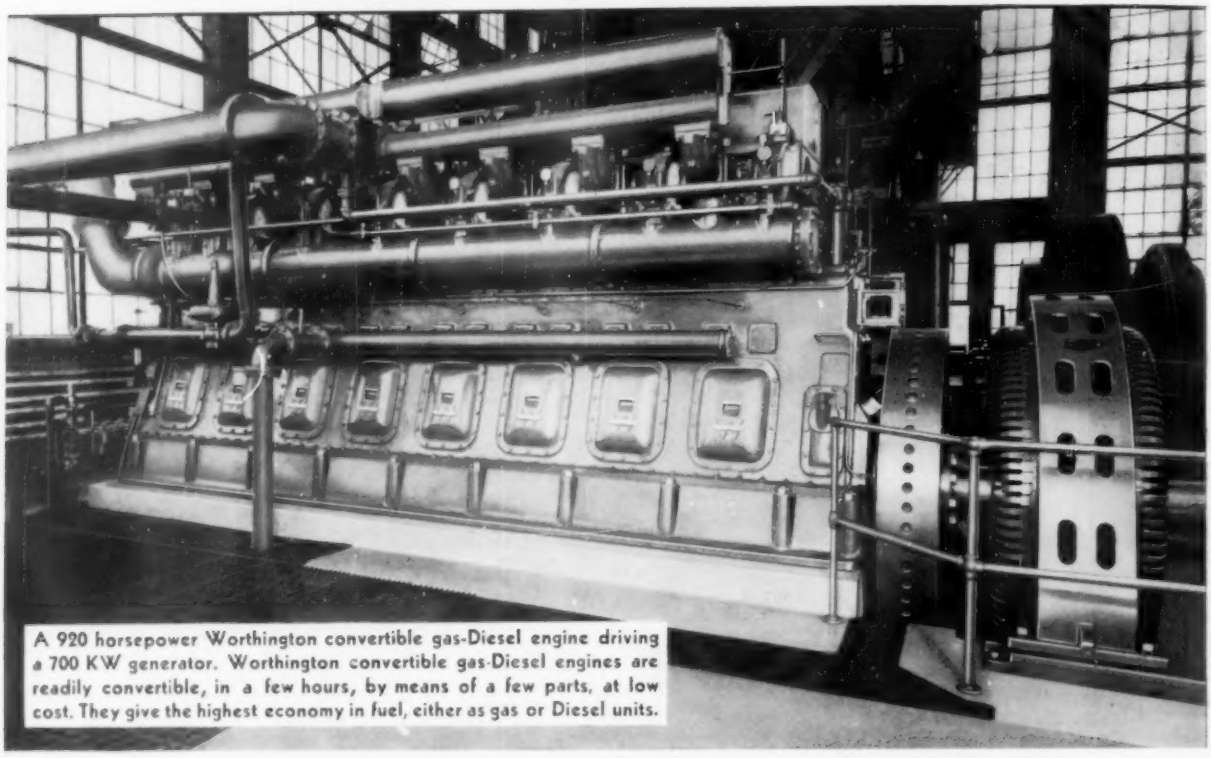
Chlorine is purchased for the four sewage-treatment plants at Greenwich in carload lots of one-ton containers, from the Hooker Chemical Co. At the Grass Island plant the containers are brought in by truck, lifted from the truck by a Chisholm-Moore electric hoist, operating on a Reading monorail. The tanks are stored in an unheated shed forming part of the end of the administration building and adjacent to the chlorine weigh room. One spare tank is kept in the storage room to be connected up to the chlorinators when a one-ton container is being shifted onto the Howe platform scales. These scales are equipped with a Weightograph magnifying scale which shows the number of pounds of chlorine remaining in the container.

The old Imhoff tanks in the original plant have been covered and are now used for three special sludge services. One section is used for settling the supernatant liquor from the digester, another section for the winter storage of digested sludge which must await dry summer weather for rapid drying on the open sludge beds, and another section receives material pumped from local septic tanks and cess-pools throughout the town and transported by tank trucks.

It is generally considered that manufactured gas is a reasonably expensive fuel as compared with fuel oil or coal. Careful studies of the cost of the gas used at the Grass Island plant in Greenwich, and the cost of installing a fuel oil burner and separated boiler show that the savings in the cost of fuel oil as an auxiliary fuel in place of gas would require at least ten years to pay for the additional equipment necessary to burn the fuel oil and sludge gas safely.

The enlarged Grass Island sewage-treatment plant at Greenwich was designed by Metcalf and Eddy, consulting engineers, Boston, Mass., built by F. H. McGraw Construction Co., of Hartford, Conn., and is operated under the supervision of Guy E. Griffin, sanitary engineer, and Superintendent of Public Works, who is responsible for the idea of economically using sewage-sludge gas and manufactured gas safely under one boiler.

Worthington Diesel and Gas Engines for Uninterrupted Power Service



A 920 horsepower Worthington convertible gas-Diesel engine driving a 700 KW generator. Worthington convertible gas-Diesel engines are readily convertible, in a few hours, by means of a few parts, at low cost. They give the highest economy in fuel, either as gas or Diesel units.

CONTINUITY of service, now, more than ever before, is a factor of prime importance

Such service is a matter of definite record in hundreds of Worthington engine installations . . . in many municipal applications.

Further, in addition to continuity of service, operating economies will contribute substantially to future earnings.

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WORTHINGTON

Water Rates and Service Charges

1940 — Part XII

Covering Domestic and Industrial Meter Rates, Discounts and Penalties, Installation Charges Fire Hydrant Rentals and Fire Sprinkler Costs

Blairsville, Pa.

Present population	5,206
Population served	6,008
Number of active services	1,390
" " meters	1,390
" " hydrants	108
Miles of water main	10

The following meter rates are in force in the borough of Blairsville, subject to a minimum charge of $2.50 per quarter:

First	3,000 gals.	$1.00	per 1,000 gals.
Next	17,000 "	.40	" " "
"	80,000 "	.30	" " "
All over	100,000 "	.20	" " "

Water rentals are charged to the owner of the property furnished with water and are due and payable quarterly on the first day of January, April, July and October. If not paid within 20 days, 10% is added to the bill, and if not paid within 30 days, the water may be shut off.

The application for water in Blairsville is a 3 x 5 blue card, which is signed by the property owner, authorizing the water rent collector to turn on water and give water service, and guarantees the payment of all bills by a tenant or the owner himself.

Where new services are installed, the city charges the cost of labor and material to the property owner.

No charge is made for public or private fire hydrant rentals nor for sprinkler heads on fire lines for the protection of private property.

HARRY C. MCCREA,
Borough Manager.

Concord, N. C.

Present population	16,000
Population served	21,000
Number of active services	4,200
" " meters	4,200
" " hydrants	230
Miles of water main	40

The Board of Light and Water Commissioners of Concord has established two sets of rates, a quarterly rate for small consumers and a monthly rate for large consumers. The quarterly water rates are:

0 to	6,000 gals.	$2.00	minimum charge
6,000 "	10,000 "	.33½	per 1,000 gals.
10,000 "	25,000 "	.28	" " "
25,000 "	50,000 "	.25	" " "
50,000 "	100,000 "	.22	" " "
100,000 "	200,000 "	.20	" " "
200,000 "	300,000 "	.18	" " "
100,000 to	200,000 gals.	$ 16	per 1,000 gals.
200,000 "	300,000 "	135	" " "
300,000 "	500,000 "	108	" " "
500,000 "	1,000,000 "	081	" " "
1,000,000 "	2,000,000 "	076	" " "
2,000,000 and over		07	" " "

These rates are subject to a 10% discount if paid by the 10th of the month following the rendition of the bill. The following rates are payable monthly and chargeable to large consumers:

There is no discount allowed on these rates.

L. A. FISHER,
Superintendent, Board of Light and Water Commissioners.

Union, S. C.

Present population	9,500
Population served	12,000
Number of active services	2,500
" " meters	2,500
" " hydrants	225
Miles of water main	35

The minimum charge for water service in Union is 83c per month, for which the use of 2,500 gals. of water is permitted. For water beyond this amount, the following rates are charged:

Next	47,500 gals.	$ .25	per 1,000
"	50,000 "	.23	" "
"	50,000 "	.21	" "
"	50,000 "	.19	" "
"	50,000 "	.17	" "
"	50,000 "	.15	" "
Excess		.13	" "

The rate charged to industrial consumers, provided they use 250,000 gals. or more per month, is 13c per 1,000 gals. A discount of 10% is allowed on all bills paid before the 10th of the month.

The municipal water works runs the service line from the main to the property line and maintains it. The charge for a ¾" tap is $10 and for a 1" tap is $20. All other taps are made at cost.

The city is charged $200 per month for hydrant rental and water used for all purposes. A charge of $25 a year is made for sprinkler connections, which permits the owner to install up to 250 heads. All heads beyond this number are charged for at 3c each per year.

MAX HOWE,
Superintendent, Municipal Electric Light and Water Works.

Maynard, Mass.

Present population	7,107
Population served	6,500
Number of active services	1,515
" " meters	1,500
" " hydrants	130
Miles of water main	15.00

The minimum charge for water on the semi-annual bill in Maynard is $2.60, and the rates for water used are:

First	10,000 cu. ft.	$ .20	per 100 cu. ft.
Next	10,000 " "	.15	" " "
All over	20,000 " "	.10	" " "

All service connections and taps are made by the Water Department, and the owner of the property is charged for the service from the property line to the building.

There is no charge for the installation and maintenance of public fire hydrants, but a charge of $25 per year for each fire service for sprinklers is made, and the service is installed at the owner's expense.

WILLIAM NAYLOR,
Superintendent and Registrar.

Saugus, Mass.

Present population	15,650
Population served	14,500
Number of active services	3,700
" " meters	3,615
" " hydrants	405
Miles of water main	40

A minimum charge of $10 is made for water in Saugus, which permits the use of 6,666 cu. ft. of water per year. All water used above this amount is billed at 15c per 100 cu. ft.

No charge is made for testing meters which are believed to be registering fast.

Meters are purchased and owned by the property owner but are maintained by the town at the expense of the owner. New services are installed by the Water Department at the expense of the town from the main to the curb line. From there, the property owner pays for the service to the stop-and-waste valve in the building. Where services are renewed, the costs must be paid by the property owner for the entire distance from the main to the building.

There is no charge made to the town by the Water Department for the installation and maintenance of public fire hydrants, but service lines carrying sprinklers for private fire protection are paid for by the property owner.

R. P. CLARK,
Chief Clerk.

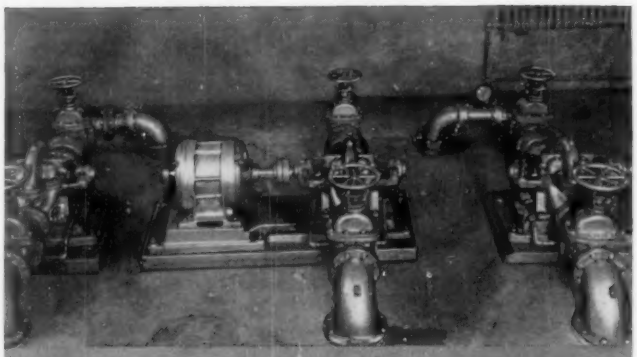
Seguin, Texas

Present population	7,200
Population served	7,200
Number of active services	1,600
" " meters	1,600
" " hydrants	120
Miles of water main	20

The domestic and industrial water rates in Seguin are $.75 for the first 4,000 gals.,

CUTS COSTS IN HALF WITH ALLIS-CHALMERS PUMPS!

City of Hudson, Michigan, Modernizes Its Water Pumping System with Allis-Chalmers Motor-Driven Pumps . . . Gets Improved Pumping Service . . . Cuts Costs from $7,000 a Year to $3,500!



THESE THREE COMPACT 25-HP 400-GPM ALLIS-Chalmers Centrifugal Pumps, installed two years ago in Hudson, Michigan, have given better, more flexible pumping service than the city ever had before . . . plus a savings to taxpayers of about $3,500 a year!

HUNDREDS of municipalities, today, keep on using out-of-date pumping equipment simply because their old pumps still work and because new equipment means an appropriation and outlay of money.

But that's false economy — as proved in the typical case of the city of Hudson, Michigan . . .

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The result? Operating costs which had been approximately $7,000 a year dropped at once to $3,500! Pumping service became more dependable, more flexible in handling high and low peak loads economically. And best of all — the new equipment more than paid for itself in the first year's savings alone!

MAYOR FRED W. STEWART of Hudson, Michigan, is proud of the record set by the modernized pumping station—designed by Pate & Hirn — with cost-slashing Allis-Chalmers Pumps giving improved pumping service.

Modernize With Allis-Chalmers Equipment!

That's the kind of record for saving taxpayers' money that municipal officers like to make. It's the kind of record you can make — if you'll follow the example of Hudson officials and modernize with Allis-Chalmers equipment.

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The Allis-Chalmers district office near you has an experienced engineer whose job it is to help you get the equipment that will give you this kind of pumping service. Call him today for a consultation without obligation. Or write Allis-Chalmers, Milwaukee. A 1319

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and then $.10 per 1,000 gals. for all water used above 4,000 gals. The minimum bill, payable monthly, is $.75.

A customer desiring service from the Municipal Department must make a written application. There is a charge of $12.50 for a service for which the city furnishes up to 100 ft. of ¾" pipe. The customer pays $.15 per ft. for the installation of all pipe over 100 ft.

There are no charges for either public or private fire hydrants. No charges are made as yet for sprinkler heads on private fire lines.

W. J. MILES,
Engineer, Seguin, Texas, Water Department.

West Chester, Pa.

Present population	13,000
Population served	Unknown
Number of active services	3,000
" " meters	512
" " hydrants	350
Miles of water main	30

The water rates for metered services in West Chester include a minimum rate of $13.20 per year for a consumption not exceeding 36,000 gals. Rates for use above this amount are as follows:

36,000 to	100,000 gals.	$ .33	per	1,000	gals.
100,000 "	200,000 "	.275	"	"	"
200,000 "	300,000 "	.22	"	"	"
300,000 "	500,000 "	.1925	"	"	"
500,000 "	1,000,000 "	.165	"	"	"
1,000,000 "	2,000,000 "	.132	"	"	"
2,000,000 "	3,000,000 "	.11	"	"	"
Over 3,000,000 gals.		.088	"	"	"

Hospitals receive water free. These rates are paid semi-annually in January and July each year, and in case of default by any person or persons for 30 days after the semi-annual installment is due, the water may be shut off the premises.

Application for service must be made at the office of the City Treasurer, and a deposit made for the estimated cost of the service from the main to the house.

No charge is made for public fire hydrants, nor for sprinkler heads on fire services for private fire protection.

LAURENCE REAGAN,
Superintendent, Department of Streets, Sewers and Water.

Northampton, Mass.

Present population	24,525
Population served	24,375
Number of active services	4,503
" " meters	4,509
" " hydrants	917
Miles of water main	95.38

A quarterly minimum charge based on the size of the meter is made in Northampton and does not pay for any water. These quarterly charges are:

⅝" meter	$ .75
¾" "	1.00
1" "	1.40
1½" "	2.40
2" "	4.00
3" "	8.00
4" "	12.00
6" "	24.00
8" "	40.00

In addition, all water used through the service and meter is charged at the following rate:

First 10,000 cu. ft. per quarter $.12 per 100 cu. ft.
From 10,000 to 100,000 cu. ft. per quarter $.08 per 100 cu. ft.
All in excess of 100,000 cu. ft. $.045 per 100 cu. ft.

The Northampton Water Department has an application book which the owner of the property or his agent must sign before the Department does any work. All work done in making taps and installing a service line is billed to the consumer, work being limited to that between the main and the property line.

No charge is made to the city or to industrial establishments for either public or private fire hydrants, nor is any charge made for sprinkler heads in industrial plants for private fire protection.

F. M. HENNESSY,
Acting Superintendent.

Defiance, Ohio

Present population	9,716
Population served	9,200
Number of active services	2,500
" " meters	2,500
" " hydrants	240
Miles of water main	30

The minimum meter charge in Defiance is $10 per year payable quarterly with a minimum allowance of 1,110 cu. ft. for 8,320 gals. per quarter. The water rates are:

First	4,000 cu. ft.	$2.25	per	1,000	cu.	ft.
Next	6,000 " "	2.00	"	"	"	"
"	10,000 " "	1.80	"	"	"	"
"	20,000 " "	1.50	"	"	"	"
"	40,000 " "	1.00	"	"	"	"
"	50,000 " "	.75	"	"	"	"
All over	130,000 " "	.60	"	"	"	"

Water service supplied through meters is classified as Domestic when the meters are 1" in size and as Industrial or Commercial when 1" or over. The water rates for all services classified as Domestic are assessed for quarterly collections payable within 15 days after the bills are rendered, in January, April, July and October. Bills for services classified as Industrial or Manufacturing are due and payable monthly.

Meters for domestic services are furnished by and remain the property of the city, but must be installed at the expense of the consumer under the supervision of the Water Department. Meters for industrial and commercial services must be purchased and installed by the consumer and must be of a type and size acceptable to the Water Department, and before being installed must be approved by the Superintendent of the Department.

Service connections are furnished and maintained by the city at the expense of the water patron, who pays the cost of labor and material as computed from the center of the street, irrespective of the actual location of the water main in the street.

There are no fire hydrant or private fire service charges except for installation.

FRANK S. TAYLOR,
Superintendent and Chemist.

Elgin, Ill.

Present population	39,000
Population served	Unknown
Number of active services	8,413
" " meters	8,377
" " hydrants	772
Miles of water main	100

The minimum quarterly charge for water in Elgin is $1.50, which permits the use of not more than 500 cu. ft. without extra charge. The rates for water used in excess of 500 cu. ft. per quarter are:

500 cu. ft. to 16,000 cu. ft. for each 100 cu. ft.	$ .16
Over 16,000 cu. ft. to 28,000 cu. ft. for each 100 cu. ft.	.15
Over 28,000 cu. ft. to 200,000 cu. ft. for each 100 cu. ft.	.14
Over 200,000 cu. ft. to 500,000 cu. ft. for each 100 cu. ft.	.13
Over 500,000 cu. ft. for each 100 cu. ft.	.12

Consumers outside the city of Elgin pay a minimum quarterly charge of $3.00 for the first 500 cu. ft. A discount of 5% is allowed if payment of bills is made within 15 days after they are rendered.

A stand-by service charge is made to industrial or commercial consumers who are actually using a water supply other than the city supply or use the city water supply either for special purposes or in case of emergency. These quarterly stand-by service rates are:

2" service	$12.00
3" "	18.00
4" "	20.00
6" "	30.00
8" "	50.00

The sprinkler and fire protection rates listed below are annual rates but the charge is billed quarterly:

Sprinkler Service

300 sprinkler heads, or less	$25.00
Over 300 to 1,000 sprinkler heads, each additional	.05
Over 1,000 to 1,500 sprinkler heads, each additional	.04
Over 1,500 sprinkler heads, each additional	.03

Private Fire Protection

For each hose reel or outlet not to exceed 1½ inch	$1.00
For each hose reel or outlet not more than 1½ inch	2.00
For each fire hydrant located on private property	5.00

There is no hydrant rental charge for public fire hydrants.

A charge of $25 is made by the city for the installation of ¾" service connections in unpaved streets and $35 in paved streets. All larger service connections are billed to the consumer at the actual cost for labor and materials.

WILLIAM H. TRENTLAGE,
Commissioner of Public Health, and Safety.

Watertown, Mass.

Present population	38,500
Population served	38,500
Number of active services	6,000
" " meters	6,300
" " hydrants	748
Miles of water main	72.92

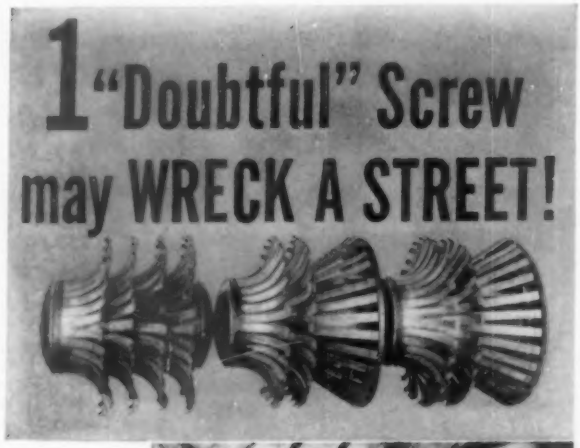
The consumption of water allowed under the minimum annual charge of $10 is 4,000 cu. ft. in Watertown. A charge for an average consumption not exceeding 500 cu. ft. per day is 25c per 100 cu. ft., and then the rates are reduced as follows:

							Per 100 cu. ft.
Between	500	and	1,000	cu. ft.	per	day	$ .24
"	1,000	"	2,000	"	"	"	.23
"	2,000	"	5,000	"	"	"	.225
"	5,000	"	7,000	"	"	"	.21
"	7,000	"	8,000	"	"	"	.18
For 8,000 cu. ft. per day and over							.13

The service pipe from the sidewalk stop cock to the inside of the cellar wall or other place desired is laid by the Department, and the expense must be paid by the consumer before the pipe is laid. The Water Department installs and pays for the service line from the main to the sidewalk.

No charge is made to the city for the installation and maintenance of fire hy-

1 "Doubtful" Screw may WRECK A STREET!



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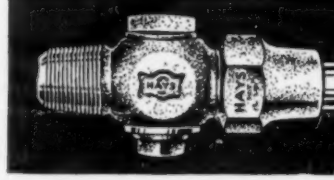

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drants. There is also no charge to private industries for sprinkler lines for private fire protection except for the water used, but the minimum rate on these services is $10 per year each.

W. E. RUNDLETT,
Superintendent, Water Department.

La Porte, Ind.

Present population	17,000
Population served	17,000
Number of active services	4,000
" " meters	2,800
" " hydrants	350
Miles of water main	50

The monthly rates for water used in La Porte are:

First	30,000 gals. used	$ .10	per 1,000 gals.
Next	60,000 " "	.08	" " "
"	120,000 " "	.06	" " "
Over	210,000 " "	.04	" " "

The minimum charges based on the size of meter for each monthly bill are:

⅝" meter	$ .65
¾" "	.75
1" "	1.00
1¼" "	1.25
1½" "	1.50
2" "	2.00
3" "	5.00
4" "	8.00
6" "	10.00
8" "	12.00

To make an application for water service, the plumber employed by the consumer signs the required forms at the office of the City Controller. The Water Department does not install the service lines, but it does make the tap in the mains. The charges for the installation of water services is $4.75 for a ¾" tap and corporation cock, and $5.75 for a 1" tap and corporation cock.

The city is billed $35.75 per year per hydrant for all connected to the water distribution system. There are no private fire hydrants. The charges for sprinkler heads for fire protection are based on the size of service leading from the main to the sprinkler lines rather than on number of sprinkler heads installed. The charges are:

2" service	$2.00 per month
3" "	4.00 " "
4" "	6.00 " "
6" "	8.00 " "
8" "	10.00 " "

ARTHUR BAKER,
Superintendent, Water Department.

Albion, Mich.

Present population	8,400
Population served	8,400
Number of active services	2,000
" " meters	2,200
" " hydrants	220
Miles of water main	28

The rates charged for water in Albion have a minimum charge of $1.50 per quarter, with no cash discount on the minimum bill. The regular rates are:

First	1,500 cu. ft. per quar.	$ .15	per 100 cu. ft.
Next	98,500 " " " "	.10	" " " "
All over	100,000 " " " "	.075	" " " "

A 10% discount is allowed on all bills, except minimum bills, if paid during the month in which the bill is rendered. If the bill for water used is not paid by the 15th of the following month, water service is shut off at the curb box. No water service is turned on until all bills against that service have been paid to the City Clerk, and in addition a fee of $1.00 for turning on the service. Then the City Clerk issues a written order that all such bills and fees have been paid.

A flat charge of $15 is made for the installation of a new ¾" service. Where larger sizes are installed, the actual extra cost is charged to the consumer.

There is no hydrant rental charged to the city by the Water Department, nor is there any charge for any type of private fire protection such as sprinklers.

H. A. RIEGER,
City Engineer.

Johnson City, N. Y.

Present population	18,300
Population served	25,000
Number of active services	4,400
" " meters	4,400
" " hydrants	336
Miles of water main	44

Two sets of rates are charged by the Johnson City Water Department, one for consumers inside the village and the other for consumers outside the village. These are tabulated below and indicate a minimum charge of $4.00 inside the city and $6.00 outside the city for each semi-annual bill:

	Inside Village	Outside Village
First 2,700 cu. ft.	$4.00 minimum	$6.00 minimum
	Per 100 Cu. Ft.	Per 100 Cu. Ft.
Next 7,300 " "	$ .15	$ .22½
" 5,000 " "	.14	.21
" 5,000 " "	.13	.19½
" 5,000 " "	.12	.18
" 5,000 " "	.11	.16½
" 20,000 " "	.10	.15
" 500,000 " "	.0495	.0495
All over	.045	.045

A 10% discount is allowed on the water bill if it is paid within 30 days from the date due.

All domestic water bills are issued semi-annually on the first day of the month. Whenever bills for water are more than 30 days past due, a final notice is issued, and if the bill is not paid before the expiration of the date stated in the notice, the water is shut off until the account is settled and an additional $1.00 paid for turning the water on again. If payment is not made until an employee of the Department goes to the premises to turn off the water, a charge of $1.00 is made for that.

All applications for the introduction of water into any premises, or for the extension of any pipes, must be made by the owner or his authorized agent in writing on blanks furnished by the Water Department, whereby the owner agrees to abide by the rules and regulations of the Department. All connections to the street mains are made by the Water Department, with an extension to the curb for which the applicant pays. No branch may be inserted in any service line without the written permission of the Department, and this is allowed only on condition that a stop cock is provided that is always under the control of the Department.

ARTHUR J. MERRILL,
Superintendent, Johnson City Water Department.

North Andover, Mass.

Present population	7,350
Population served	7,250
Number of active services	1,595
" " meters	1,595
" " hydrants	320
Miles of water main	53.25

All meter rates in North Andover are computed quarterly and are rendered on the first day of January, April, July and October, for the amount of water used during the previous quarter based on the following sliding scale:

First	2,000 cu. ft.	$ .18 per 100 cu. ft.
All over	2,000 " "	.12 " " " "

The minimum charge per quarter per service is $1.50.

There is no hydrant rental paid by either the town or private industries, and no sprinkler charge for fire protection is made.

The operating expenses on bond and interest charges are covered by the receipts from water rates and construction charges, so that the Water Department is self-supporting.

WILLIAM B. DUFFY,
Superintendent, Board of Public Works.

Malone, N. Y.

Present population	8,800
Population served	10,000
Number of active services	1,500
" " meters	35
" " hydrants	125
Miles of water main	44

The following meter rates are at present in force in Malone, N. Y.:

First	10,000 gals	$ .30	per 1,000 gals.
Next	25,000 "	.20	" " "
"	50,000 "	.15	" " "
"	100,000 "	.10	" " "
"	200,000 "	.08	" " "
All over	385,000 "	.05	" " "

For water used in any quarter of the calendar year, the minimum charge per meter is $1.00 per month. All commercial users pay $.05 per 1,000 gals. for all water used over the minimum.

Any person or persons desiring to tap water mains outside the village of Malone must pay a fee of $200. The total mileage of mains is 26 miles in the village and 18 miles outside.

There is no charge to the village of Malone for fire hydrants connected to the distribution system nor for services supplying sprinkler heads for private fire protection.

E. J. VANDEUSEN,
Superintendent, Water Department.

City Manager Appointments

Robert Baumberger, former Town Manager of Castleton, Vt., is now City Manager of Ludlow, Vt.

Richard T. Linnell, Town Manager of Ludlow, Vt., since 1939, has become first Town Manager of Hartford, Vt.

George B. Wilkes has succeeded J. R. Brown as City Manager of Cordele, Ga.

CLARENCE E. RIDLEY,
Director, International City Managers' Association.

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ACCURACY
DEPENDABILITY
SENSITIVENESS
LOW COST MAINTENANCE

BADGER Water METERS

Forward Steps

Reported by Municipal Officials, Chamber of Commerce Executives, and Others

Comprehensive Recreational Development for the Detroit Metropolitan Area

DETROIT, MICH.—By a vote of almost two to one, the people of Detroit and vicinity approved in the November elections the Detroit-Huron-Clinton Parkway-Playground Proposal, establishing a Metropolitan Authority and Park District, to plan and carry out a complete and coordinated recreational and parkway development project for the five counties constituting the metropolitan area of the city. A scenic parkway, enclosing Detroit in an approximate half-circle with an average radius of 30 miles, and winding through the beautiful valleys of the Huron, Clinton, and Detroit Rivers, will serve as the backbone of the public recreation system of parks, playgrounds, bathing beaches, over-night shelters and other facilities. A system of landscaped express highways or "freeways" radiating out from Detroit will provide quick access to these recreational areas. The accompanying diagram shows the broad outlines of the plan.

Public-minded citizens have long hoped for more adequate development of Detroit's great recreational resources and potentialities. To date, development has been extremely laggard. It is estimated that the city has only 20 per cent of the recreational space which it needs. There is only one acre for every 500 people, as compared to one acre for every 100 people in many other metropolitan areas. Of the 60 miles of river- and water-front in the area, which are suitable for bathing, only 100 rods are in public ownership, whereas New York owns 40 miles of public beaches, and Chicago owns 28 of the 35 miles of Lake Michigan frontage.

In March, 1937, a survey by University, state and Federal agencies, which pointed out these recreational inadequacies, led to the formation of the Detroit-Huron-Clinton Park and Parkway Association, a non-profit organization of public-spirited citizens and city and county leaders, which has pushed the movement for the Act passed by the 1939 State Legislature, setting up the referendum voted on in November.

The Act sets a maximum tax of 25 cents on a property valuation of $1,000, although only about one-fifth of the amount authorized will probably be needed in the early stages of the development. Much of the actual cost will be met by state agencies, such as the Conservation and Highway Departments, thus returning to the Detroit area a greater portion of the large percentage of Michigan taxes which it now pays.

The project will bring advantages to the community in increased land values, greater employment, increased auto usage—Michigan's major industry, more tourist dollars, a reduced crime bill, and, of course, healthier and happier citizens.

H. O. WHITTEMORE,
Chairman, Park and Playground Committee, Detroit-Huron-Clinton Parkway Association.

Through five southeastern Michigan counties would wind the proposed Detroit Huron-Clinton scenic parkway, backbone of a chain of diversified recreational features. Its two ends could be connected by a pleasure drive along the Detroit River and Lake St. Clair. New express highways, radiating from Detroit, would take people quickly to the pleasure-lands or to points beyond

Land Sales Department to Handle Tax-Delinquent Property

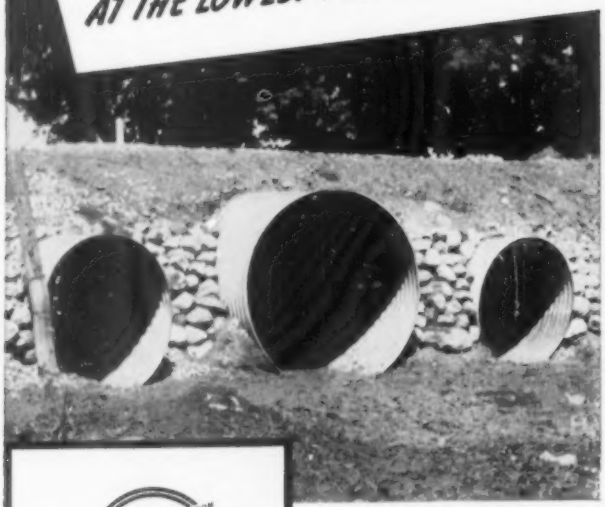
PASADENA, CALIF. — This city has approximately 1,000 pieces of tax-delinquent property valued at about $1,000,000, 40 per cent of which is owned by two corporations. We have recently set up, by ordinance, a Land Sales Department, consisting of a land sales agent and clerk, which has as its purpose to rehabilitate and restore to the tax rolls property deeded to the city for tax delinquencies, and to aid in the collection of taxes and assessments on this property.

The new ordinance, effective October 1, 1940, states that it is the duty of the land sales agent, wherever possible, to restore tax-delinquent property to the tax rolls, by means of: its redemption by persons having rights to it; procuring conveyances to it from the state to the city, carrying out any other action necessary to provide the city with merchantable title to it, and effecting sales thereof; acquiring releases of any claims or other clouds on the title of such property; and assisting in its valuation.

Certain of this tax-delinquent land adjacent to parks will, however, be retained by the municipality for public use. The city can, and may, also retain any of it that can be used for street opening and widening, and a few parcels of land next to public buildings, which could be used for

HIGHWAY PROTECTION

AT THE LOWEST PER YEAR COST



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cincinnati, ohio

parking automobiles and equipment used for municipal purposes. Although it is not the present policy of the city to retain them, certain parcels of tax-delinquent property in the business area of the city could be used for municipal parking lots.

C. W. KOINER,
City Manager.

New Publications

The Chicago Recreation Commission has just issued two publications. The Civic Directory, 1940 edition, lists city-wide and local groups giving public service, such as business, civic, cultural, educational, governmental, professional, welfare, improvement, labor, and military organizations. Volume V of the Chicago Recreation Survey contains the Summary of Findings, and recommendations of the Commission. Each can be obtained for $1 from the Municipal Reference Library, City Hall, Chicago.

A Well-Planned Municipal Shade-Tree Nursery

WOOSTER, OHIO.—The city of Wooster has established a nursery for the propagation of shade trees, which will be used to replace dead, dying or damaged trees on the public thoroughfares. The idea of a municipal shade tree nursery was advanced before a session of the Lions Club, early in 1940. The suggestion was made that vacant lands owned by the city could be so utilized at great future advantage.

A survey of shade trees in the city had been made previously by experts from the Ohio Agricultural Experiment Station, located at Wooster. A report was made before the Lions Club, of which city officials are members, indicating that many trees had been severely damaged by the ravages of the elements both previous to and during last winter. Wooster is rightfully proud of its tree-lined streets and boulevards. There are hundreds of great native trees, their branches and leaves interlaced high above the sidewalks and the attractive lawns.

City officials, especially Mayor Ralph Fisher and Fred Howard, Director of City Services, had previously agreed that certain tracts of city property should be landscaped. As a consequence, when R. R. Patton, of the Experimental Station, concluded his remarks on the Wooster shade trees, the suggestion of such a nursery was most impressive. Edmund Secrist, Director in Chief of the Experiment Station, endorsed the idea as being sound economically. It was his contention that enough native shade trees could be produced upon an acre or two of suitable land to supply replacement trees for a lifetime. Mr. Patton explained that trees could be grown at practically no outlay of expense and urged that the undertaking be started without delay.

The first steps taken were tests, made at the Experiment Station, of the soil at a vacant and unused plot of land, to the north of the city reservoir, on Beall Avenue, perhaps 600 feet north of the city-maintained garage; also tests of the sludge of the city sewage-disposal plant, to determine whether it could be utilized as fertilizer if required.

The soil at the suggested location was found to be admirably suited for the purpose. Then began the preparation of the original diagram for planting seedling trees. The Mayor turned the entire matter over to the energetic Service Director.

It thus came about that a diagram of planting was executed on the typewriter. Completed, it presented the picture of a stately tree composed of a total of 35 lines, the apex specifically showing the location of a single tree.

Each of the rows of trees shown upon the diagram was of seven different varieties—native trees of this section of Ohio. Key-letters indicated the seven varieties and the total number of each in the diagram.

The diagram key is as follows:

Variety	Number
A—White Pine	25
B—Red Pine	25
C—Tulip Poplar	39
D—Red Oak	215
E—Sweet Gum	111
F—White Oak (Swamp)	34
G—Black Spruce	26
Total	475

But the actual total is 510 trees in the plot, because there is a red oak tree at the end of each of the 35 rows, as explained upon the diagram.

An inspection was recently made of this incipient nursery for shade trees, and all are up and coming, the seedlings having taken root, and the root systems of all are said to be in a most thriving condition. The little trees certainly look the part.

Service Director Howard stated that he was well pleased with the results thus far attained but indicated that this first planting will provide the city with another problem—probably within the next three or four years—when it will be necessary to transplant the trees, because each individual will need more room for proper growth and nourishment.

Under present conditions these little trees are planted three feet apart in each direction. It was judged, from a scientific standpoint, that three feet spacing was sufficient for the time being, permitting sunlight and rain to reach each tree in quantities required. The more than 500 seedlings were donated to the city by various public-minded citizens, but the majority of them came from the Experiment Station. They were planted by city laborers early last spring under expert direction.

Wooster is adorned with a beautiful city park which adjoins the County Club and Golf Course. In the park there are numerous beauty-spots, gigantic trees of the hardwood variety, which have existed from the days of the primeval forests. At the same time there are bare spots, where other and smaller nurseries could be planted, which, when mature, could supply other trees to take up the slack.

The city also has another tract of land surrounding the great water

College Avenue at Wooster College Campus—One of the Streets which the City Will Keep Beautiful with Its New Nursery

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tower on Cleveland Road. Here is additional space for a shade tree nursery should it prove necessary.

Trees in the original plot are inspected to see that they are free from any disease and also to see whether insects or worms are at work on tender roots or twigs.

It is said that in recent weeks hundreds of persons have visited and admired the work which has been accomplished thus far and watched the progress the little trees are making.

The spacious campus of the College of Wooster is made more beautiful and attractive by many aged giants of the original forest which covered this section of Ohio before the coming of the first settlers in 1806.

DEAN NORRIS.

Tax Policy League Becomes Tax Institute

THE TAX POLICY LEAGUE, INC., organized in 1932 and operated since that time from New York as a national research and public information service in the field of public finance, has become affiliated with the Wharton School of Finance and Commerce of the University of Pennsylvania, where it will be known hereafter as the Tax Institute.

The transfer was made possible by the Alfred P. Sloan Foundation, which has awarded a grant to the University to support the work of the Tax Institute during its first year.

The Tax Policy League's Advisory Council of distinguished authorities will continue to function in a similar capacity for the Tax Institute. The Administrative Board for the first year under the new affiliation, chosen mostly from the Advisory Council membership, will include:

Frederick L. Bird, Director of Municipal Research, Dun & Bradstreet, Inc.
Alfred G. Buehler, Associate Professor of Public Finance, University of Pennsylvania
Harold S. Buttenheim, Editor, THE AMERICAN CITY
Mark Eisner, member of law firm of Olvany, Eisner & Connelly
Paul H. Musser, Administrative Vice-President, University of Pennsylvania
Ernest Minor Patterson, President, American Academy of Political and Social Science
Carl Shoup, Associate Professor of Economics, Columbia University
Dr. Stephen B. Sweeney, Director, Institute for Local and State Government, University of Pennsylvania
Alfred H. Williams, Dean, Wharton School of Finance and Commerce

Dr. Mabel L. Walker, Executive Secretary of the League since its organization, will continue as Director of the Tax Institute, with headquarters at 135 South 36th Street, Philadelphia.

Using Municipal Office as a Springboard

THE Citizens League, of Cleveland, Ohio, calls attention in its November 14 bulletin to a problem accentuated by the election of Mayor Harold H. Burton to the United States Senate:

Cleveland has gone through an experience in the past three or four years which should be convincing on the question of the use of one public office as a springboard to leap into a higher office. The city charter, until a few years ago (1934), contained a prohibition against such practices. But the Council submitted a charter amendment, which was opposed by the Citizens League but approved by the voters, striking the prohibition out of the charter. The prohibition has never been in the state laws, except as to judges. Since 1934, therefore, any appointive or elective office-holder (not in the classified civil service) in the city or county service can legally seek any office, other than the one he is then occupying, and do so while he is still holding the other office.

A number of such candidacies have occurred since 1934; but the candidacy of Mayor Harold H. Burton, who was elected to the United States Senate last week, brings the question to the front. Mr. Burton has known for three or four years that he would soon seek higher office; and the public was also convinced of that fact when they reelected him as Mayor for the third term. But he had given the city such an unusually efficient and satisfactory administration that the voters waived the springboard issue and reelected him last year by a goodly majority; knowing that he would in all probability not complete his term.

City Service Seriously Crippled

The Citizens League made no protest for the same reason. But the League cannot now blind its eyes to the fact that for the past twelve months business at the City Hall has lagged badly as evidenced by the little progress made in the solution of a score of important pending issues before the Council and the administration, such as the street-railway franchise, the sewage-disposal problem, the water-rate issue with the suburbs, which were either slowed up in their solution or seriously neglected by the absence of the Mayor.

The community is proud of the fact that its efficient Mayor has been elected to the U. S. Senate; but we are convinced that his election has been accomplished at too great a cost to the city. The Mayor's job is a full-time job and requires the best that a man can give. In our opinion, the charter provision should be restored, prohibiting the use of municipal offices as a springboard to attain a higher office.

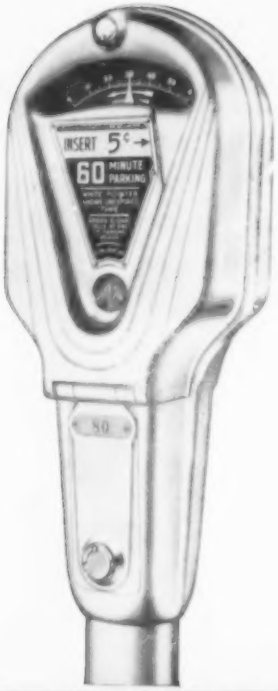
Playground System Planned to Cut Juvenile Delinquency

AFTER 14 YEARS OF FIGHTING JUVENILE DELINQUENCY, a Chicago police lieutenant has worked out a playground plan which he believes will cut juvenile delinquency and crime rates by one-half, the International Association of Chiefs of Police reports.

As a result of observations and experiments by Lieut. Harry Costello, head of the Chicago Crime Prevention Bureau, the Chicago Police Athletic League for Juveniles will be set up. The plan calls for the establishment of "play spots" throughout the city, each under the supervision of young policemen able to teach physical education. Funds for equipping the playgrounds will be obtained through donations from public-spirited citizens and organizations. Lieutenant Costello said boys' clubs, the Catholic Youth Organization, Off-The-Street-Club, Boys Brotherhood Republic and similar groups obtain excellent results, "but there still are too many 'cop haters' among underprivileged youngsters." Preliminary plans call for three playgrounds, with additional ones in the future. Baseball, football and basketball teams will be developed to compete in the league, and championship teams will compete with similar teams in other cities.

Lieutenant Costello said he has learned from his work that 90 per cent of the young delinquents can be turned from paths of crime with proper guidance; there is a bit of larceny in almost every child; nobody can talk reform to a boy who is hungry and poor; prosecution is a poor method to reduce juvenile crime and should be supplanted by prevention and correction; and every police officer should be given a course in handling children.

Lieutenant Costello said his Bureau received 11,549 juvenile cases last year. The Bureau adjusted 10,007 cases, and only 1,542 of the delinquents were called before a judge. Of these, 335 were committed to institutions and the rest placed on probation.



CLEVELAND, OHIO, buys additional
DUAL AUTOMATIC PARKING METERS

(Editorial in Cleveland Press 9-17-40)

"Parking meters, since their installation in the downtown district, have measured up to the most optimistic expectations. Motorists like them, merchants approve the installations and revenues have been substantial.

"Results of operations in the downtown district fully warrant the extension to outlying business sections, which the city now proposes to carry out. Additional machines contracted for will be distributed in eight neighborhood business districts. There is every reason to believe that they will prove equally popular in these locations. Two-hour parking, to be permitted along certain downtown streets, as well as 1-cent parking zones in front of banks and public utilities, also should meet popular approval."

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Write today for information on this profitable tool.

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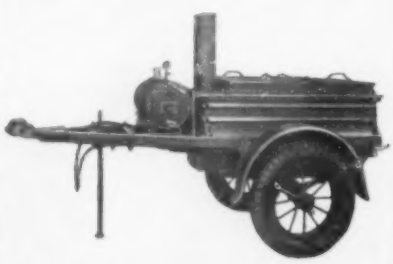

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Traffic Control and Facilitation

Conducted by Publications Committee, Institute of Traffic Engineers, 60 John St., New York

Paul L. Green, Chairman; Louis A. Andriacchi, Frank A. Ashe, Charles G. Beckenbach, Wallace L. Braun, Nathan Cherniack, Carl E. Fritts, Alexander A. Hayton, Otto K. Jelinek, Harry C. Koch, Merwyn A. Kraft, Franklin M. Kreml, Tracy D. LeMay, Harry E. Stedman, Robert O. Swain

State Traffic Advice to Towns

By C. E. Fritts

Traffic Engineer, Washington Department of Highways

IN THE state of Washington, 60 per cent of all accidents occur on city streets and 40 per cent on the rural highway system. Accident analyses on the basis of the amount of travel indicate that state highways are the freest of accidents per mile of travel; however, when only fatal accidents are considered, we find the state highways and city streets equally hazardous. County roads have a higher fatality rate per mile of travel than either the city streets or the state highways.

Programs

The accepted programs for reduction of accidents through education, enforcement and engineering, are sound. There are countless examples of their effectiveness when properly developed and carried out. However, we find that the smaller cities and counties generally are making no use of the proven programs to bring about the elimination of accidents, waste and costly traffic delays. Even some relatively large cities have failed to provide constructive programs. In Washington it seems highly desirable that the smaller cities and counties be encouraged to participate in a state-wide move for the common interest. State agencies can supply a much-needed impetus for the inception of a complete program, not only in the field of traffic engineering through the services of the Highway Department, but also through other state agencies in the fields of enforcement and education. While we are primarily concerned in this discussion with the need for more extensive use of traffic engineering technique, we believe that the same type of aid can and should be given in the educational and enforcement fields.

Publicity

Widespread publicity indicates that the administrative personnel of cities, counties and states recognize the necessity of concentrated effort toward solution of the traffic problem. Publications are devoting much space to the various phases of the problem; national agencies are conducting research into traffic problems and making available the results; the services of specialists are being made available to the various political subdivisions.

Vehicle Performance Ahead of Street Design

Everyone concerned with the problem of safe and efficient traffic movement recognizes that the problem does not originate in the modern motor vehicle as it is delivered to the owner. It is because of the advance in automotive design beyond that of street and highway capacity, and because of the ever-increasing use, that we do have a problem. A problem does originate in the motor vehicle where the owner has failed to keep it in a safe operating condition. In a number of cities that failure of responsibility has brought about compulsory inspection. This program on a state-wide basis takes care of one of the important elements in the program of quicker and safer flow.

State Traffic Engineers

A sufficient number of traffic engineers is not yet available for the many places where they are needed; however, nearly every progressive highway department has established a division of traffic engineering which could be of material assistance to the smaller subdivisions. In Washington, all accident reports are filed with the local enforcement agencies and copies forwarded to the State Patrol, where they are analysed.

State and City Uniformity

There are many reasons why it is desirable to have a central agency coordinating the traffic engineering activities of a state. The first is uniformity of traffic control measures. It is doubtful if uniformity will ever be achieved by expecting each city or county to keep abreast of uniform requirements.

Success of Cooperative Effort Amply Demonstrated

The success of cooperative effort has been demonstrated in the state of Washington in several of the smaller cities located on the main state highways. The Traffic Engineering Division has assisted cities by outlining a series of surveys such as volume counts, turning movements, origin and destination, accident, parking studies, etc. The actual field surveys were made by local employees. The analysis was made by the state, and the city officials cooperated in the final recommendations. Results of such studies in all instances have provided benefits beyond expectation, and the motoring public has marked those towns as progressive in the relief of costly delays and accidents.

An example of such cooperative effort is indicated by the recommendations resulting from such a survey made in the city of Ellensburg, of 5,720 population.

A. *Traffic Laws*

Adopt a traffic ordinance which is based on the state code and the model municipal traffic ordinance prepared by the National Conference on Street and Highway Safety.

B. *Speed Limits*

Establish 35-mile-per-hour speed zones at city entrances on three primary state highway routes, providing a step down in speed from 50 miles per hour on the primary state highways to 35 miles per hour through the transition zone, to 25 miles per hour inside the built-up section of city streets. These transitions were based on speed surveys.

C. *Signals*

Remove three existing traffic signals and replace one with flashing signal. Two signals to be replaced by stop signs on minor traffic volume streets.

D. *Parking*

Prohibit all parking on side of streets adjacent to school. Restrict parking at intersections to within 30 feet of the approach to a stop sign, or otherwise within 20 feet of the near side of any crosswalk. Readjustment of time of parking limit to fit character of traffic using parking facility. Eliminate angle parking in central business district.

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are built "TO TAKE IT"!

SOME exclusive Karpark features are:—a housing so tough that it will withstand twenty tons per square inch,—a 2½" standard, almost twice as strong as the usual 2" post,—and a rugged pendulum escapement which eliminates fragile hair springs and balance wheels.

→ A Karpark Automatic takes the hard bumps of exposed traffic use in its stride with a minimum of supervision and a maximum of accurate and continuous parking service.

→ Detailed information of all phases of parking control problems will be forwarded on request.

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A Baker Reversible Blade Snow Plow doing a clean job by getting right down to the pavement surface, thanks to the Baker Sectional Tripping Blades.

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BAKER SNOW PLOWS

E. *Signs*

Replace existing non-standard signs. Install new signs where needed.

F. *Education*

Begin safety education in city schools.

G. *Accident Prevention*

Make collision diagrams and spot maps showing location of all accidents.

H. *Arterials*

System of arterial streets to be established on basis of traffic surveys.

Following these recommendations, results have been highly gratifying to local officials and motorists. Similar surveys are in progress in other cities of the state.

Large Cities

Such a plan of cooperative effort cannot economically be extended to the larger cities and more populous counties. In those cases the problems are large enough to warrant the full-time employment of qualified traffic engineers. It is pleasing to report that in every instance where qualified personnel is employed by the larger cities, close cooperation exists because of the understanding of basic principles and standard practices. The smaller cities cannot afford full-time traffic engineers, and therefore they must look elsewhere for assistance.

By the use of a plan of state traffic engineering aid to smaller cities and counties, and the cooperative effort of trained personnel in the larger cities and counties with the state agencies, a state-wide program, to alleviate costly delays and accidents, will provide untold benefits to all users of motor transportation.

The Village Traffic Problem

By H. Lloyd Jones
Trustee and Police Commissioner, Village of Bronxville, N. Y.

Because of constantly changing conditions, it would seem that, like the poor, traffic problems will always be with us, whether in Bronxville or in any other community; consequently, improvements effected today cannot be regarded as fully meeting the demands of the future. It therefore behooves local government officials to look and plan ahead, as by the exercise of such foresight they may spare themselves much grief and their communities possibly needless expense. In the last analysis, however, anything like complete success can be attained only if the driving public will cooperate by closely observing all traffic rules and regulations. H. Lloyd Jones.

THROUGHOUT our country there are hundreds of small communities which are confronted with serious problems arising out of traffic congestion because of their proximity to large cities. Typical of these communities is the village of Bronxville, a wholly residential community of 7,000 population, located in Westchester County 16 miles from the heart of New York City.

Bronxville is typical in that it is forced to meet changing conditions over which it has no control. Most of its streets were laid out in more leisurely days, and while they curve and meander about to give a charming park-like effect, they are not suited to a heavy flow of motor-vehicle traffic. Residences, for the most part, are one-family homes, and all activities, such as shopping, church, school and picture house, are centered in a very small area adjacent to the railroad station.

Until recent years street facilities were adequate for residential traffic to and from the railroad station and shopping district; but, gradually, surrounding communities have grown and developed, principally on account of large apartment-house projects, with the result that Bronxville is now the center of, and services, a population of over 30,000. A large commuting population uses the railroad station, which adds to our traffic difficulties during the morning and evening train hours.

Generally speaking, therefore, in common with most villages, Bronxville's difficulties may be summarized as follows:

(1) Traffic congestion due to the centralization of acivities in the shopping and railroad station area.

(2) Lack of parking space.

(3) Exposure to accidents.

Intensive studies over a period of many months revealed that conditions could be remedied only by an all-embracing scheme involving street alterations, the widening of a bridge, re-routing of traffic, installation of parking meters, acquisition of a village-owned area for long-time parking, construction of access driveways in rear of stores for loading and unloading, adoption of an ordinance restricting through trucking, and, as an added safety measure, the adoption of a Bicycle Ordinance.

The accompanying charts show the layout of the congested area before and after making the physical changes consisting of the construction of new centerline curbing, new traffic islands, rounding street corners, and the widening of a bridge over the underpass to permit two-way traffic. (See p. 99.)

As shown in the right-hand chart, access driveways are provided in the rear of the stores on both sides of Pondfield Road, the main shopping street, thus releasing space for shoppers and removing a traffic hazard. It will also be noted that the village-owned area for long-time parking is in the vicinity of this busy section.

Parking meters, in addition to eliminating double-parking and the long-time parker, have had the effect of speeding up the short-time parker. The meter installed is of the automatic type which permits 12 minutes parking for one cent, 24 minutes for two cents, and so on up to 60 minutes for five cents. Contrary to popular belief, the primary purpose of parking meters is *not* for revenue but to help regulate and speed up the flow of traffic. Villagers and tradespeople of

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MINUTES REMAINING
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TO OPERATE
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ANY ONE USING SLUGS OR FOREIGN METAL IN METER IS SUBJECT TO ARREST

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MILLER dependability comes from long experience. In one installation MILLER METERS were operated more than seven million times over a 12 months' period with a trouble record for several months of less than 1/500 of one per cent.

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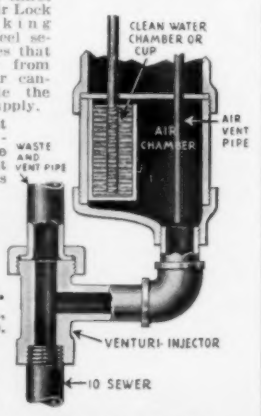
It is the most sanitary fountain obtainable — the sturdiest Murdock has ever built.



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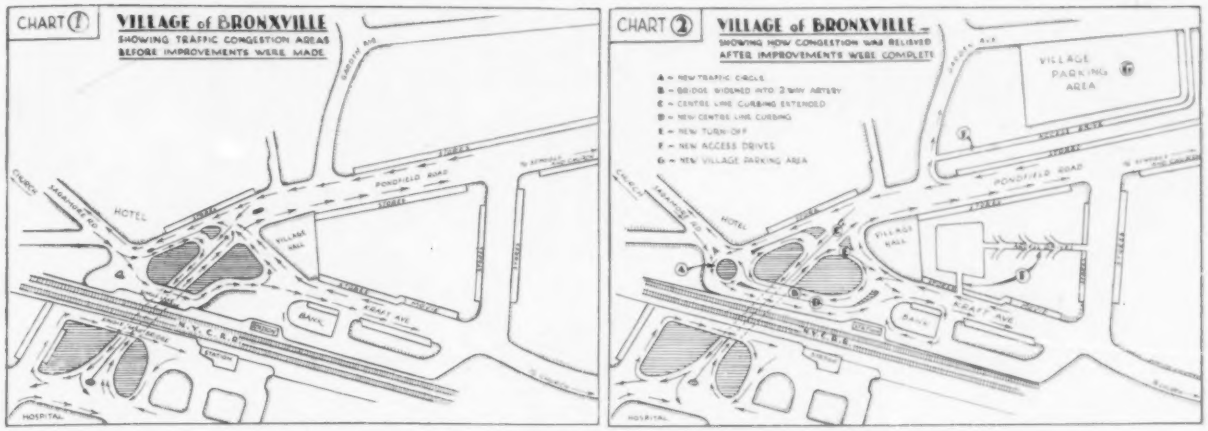

Before and After Traffic Improvements Which Relieved Congestion in Bronxville, N. Y.

—For the suggestions respecting physical changes, credit is due the traffic engineers associated with the National Conservation Bureau, the Accident Prevention Division of the Association of Casualty and Surety Executives, a national organization whose membership includes most of the stock casualty insurance companies operating throughout the United States.

Bronxville now recognize this, and they regard their installation as a constructive move; and it is significant that two neighboring large-size cities, Yonkers and Mount Vernon, have since followed Bronxville's example.

To achieve complete success with the meters, however, strict enforcement of the parking-meter ordinance is absolutely essential. The issuance of tickets is always unpleasant, as in the majority of cases parking violations are due to carelessness. However, typical of all villagers everywhere, the "victims" show good sportsmanship and, after a better understanding of the need for strict enforcement, readily recognize their personal responsibility and are glad to cooperate with the enforcing authority.

Under the trucking ordinance mentioned in an earlier paragraph, through trucks have been re-routed away from the main thoroughfares of the village.

Not the least interesting feature of the all-embracing scheme is the adoption of a Bicycle Ordinance which requires the registration of bicycles and the observance by cyclists of all traffic rules and regulations. Because Bronxville is a community of families, most of which include young children, it was felt that the enforcement of this ordinance would reduce accidents; furthermore, that in having to learn and conform to the rules of the road now, our automobile "drivers of tomorrow" should become more safety-minded and better trained than present-day drivers. Under the enforcement provisions, a postal card summons for violations is sent to the parent and not to the child. On the postal card are listed a number of police traffic violations, such as driving the wrong way on a one-way street, driving on the sidewalk, driving on the left side of the road, carrying another person on the bicycle, driving in a reckless manner, and having improper equipment.

When a child violates one of the traffic rules, thus endangering himself and the public, the parent receives the postal card notifying him of the violation and asking him, on the first violation, to deprive the child of the bicycle for one week, for a second violation two weeks, and for a third violation three weeks. On the fourth violation, the police step in and confiscate the bicycle for a period of six months.

A Parking Resolution

The American Automobile Association urges nation-wide efforts to alleviate the parking problem, with particular attention to the following:

(a) Cities should cease to neglect their parking problems. To date there is little recognition of the real nature and magnitude of them. Little has been done except to regulate and re-regulate parking at the curb, but at least in the larger cities modern parking needs cannot be met by curb regulation.

(b) Cities should secure their own basic facts. They must not only determine present transportation and parking practices but must also consider the desires of motorists.

(c) Cities should determine objectives and policies to govern parking improvement programs. Policies should be determined concerning all-day storage, short-time parking, loading, parking facilities in connection with certain new buildings, etc.

(d) Provision of parking facilities by merchants or merchant groups should be encouraged.

(e) In general, parking facilities should at least be self-supporting, if not self-liquidating, if financed by municipalities.

(f) In many central business districts, there are considerable numbers of off-street parking spaces which are not used even during busiest hours. Steps should be taken to produce more effective use of such spaces.

(g) Cities should study further the merit of requiring off-street or non-peak-hour loading of merchandise.

(h) Building codes and zoning ordinances should be studied to ascertain if open-deck or other low-cost parking structures can be legally constructed. If not, warranted changes should be made.

(i) A.A.A. motor clubs are urged to take leading parts in arousing the interest of local business and municipal leaders in parking improvtment programs.

Up-to-Date Police Radio

After Operating an amplitude modulated emergency communications system for five years, the city of Nashville has ordered a complete FM system from the General Electric Co. The new system is confidently expected by city officials to meet their needs as to both greater range and noise-free operation.

The system for Nashville will include 1 250-watt and 24 25-watt G-E transmitters, and 30 G-E receivers. The headquarters transmitter will be located in a building to be erected on Love Circle Hill in Nashville, and broadcasts will be made by remote control from police headquarters. A 200-foot tower is to be constructed on the hill and will support a half-wave antenna of new design that provides complete lightning protection.

Nashville is the first Southern city to adopt frequency modulation for police communication.

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Western Electric Police Radio systems include modern types for central transmission or 2-way communication. GRAYBAR Representatives will help plan systems to meet local needs. The coupon brings full information.

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Karpark solves the perennial parking problem, gives safer traffic conditions, all on a paying basis. Karpark Meters have special features which make their installation appeal to the whole community. Ask GRAYBAR for reports on the successful experience of other cities.

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Title or Occupation.....

Street.....

City.....

During December we hope you will remember to mention THE AMERICAN CITY.

Outdoor Lighting

Streets—Highways—Floodlighting

Come on Now—

Let's Light Up the Town

By O. P. Cleaver
Westinghouse Lamp Division,
Bloomfield, N. J.

IN the real Christmas community civic authorities and business combine not only to decorate their respective stores, court-houses and office buildings, but to create Christmas fairylands out of main streets, with sparkling colorful decorations that tell the world that Santa Claus reigns.

Christmas Decorations

Decorations on individual public buildings, stores and offices need not be elaborate, but should be designed with both daytime and night appearance in mind. Wires strung with lamps at regular intervals may look fine at night, but in the daytime such designs lack form and finish. Inexpensive green garlands, either fresh or artificial, wrapped around the electric wires to conceal them, add greatly to the effect both day and night.

Soft floodlighting of building surfaces, to which the decorations are attached, provides a colorful background. The floodlighting need not always be even; on the contrary, many interesting shadows and silhouettes in the form of trees or of Santa Claus and his reindeers can be cast on large surfaces with small cut-outs placed in front of concentrating spotlight projectors. Columns of light emphasizing architectural details of a building may also be a part of the design. Whenever possible, individual Christmas trees should be floodlighted, even if they are further decorated with strings of colored Christmas-tree lamps, to bring out their form and composition.

Sometimes ignored, however, is the fact that "just any color" of floodlighting may be worse than no floodlighting. Look out for red floodlighting, under which all garlands and evergreens become gray and black. Much more attractive is blue, green, or blue-green floodlight. Where red floodlighting is necessary for composition, all green garlands and other decorations which depend upon green pigments for coloring must be shielded from red light. Frequently the clever designer will flood his building background in white or pale amber, and add extra spotlights with green color screens to emphasize the green pigments in his decorations, and likewise red spotlights for the red pigments. This gives great freshness and life to the decorations.

So much floodlighting in addition to lighted trees, wreaths, and garlands may seem unnecessarily elaborate, but observe how clearly the lighted trees on the industrial building (p. 103) stand out in graceful form against an otherwise dark background. The lamp-studded garlands and other decorations on the connecting bridge gain in appearance by having a lighted background. On the other hand, note in the large photograph how indistinct and lacking in definition are the decorations on the front of this modern department store, which might easily have been flooded with small lamps concealed on top of the entrance marquee.

Midget Floodlights

Decorative and temporary floodlighting today does not present the many problems of two or three years ago. The introduction of small 150-watt incandescent lamps in hard-glass bulbs with self-contained reflectors that can be used out-of-doors in any weather, with no other required equipment than waterproof sockets, has put floodlighting within the means of the modest home owner, as well as the large department store designer. Another new lamp in a hard-glass reflector bulb, similar to the projector lamp described above, is the 100-watt high-intensity mercury quartz inner-bulb lamp, characterized by its high efficiency and its bluish-green light, which gives an unusual fresh green appearance to evergreens. This lamp was introduced at the New York World's Fair, where it was used to light many of the trees and green shrubs. Its cost of operation is slightly more than for incandescent lamps, since it requires a transformer for its operation, and its list price is greater than for filament lamps designed for similar service. The color of its light, however, cannot be duplicated, and the fine appearance of trees and garlands lighted by it justifies the extra cost.

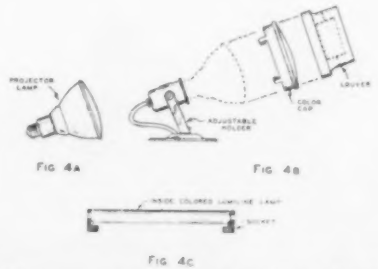

FIG. 4A FIG. 4B

FIG. 4C

The new 150-watt Mazda projector lamp with hard glass bulb coated with a reflecting surface; at right, stand and color screens for this lamp; below, new inside-colored lumiline lamp, for red, blue, surprise pink, orange, straw, white and clear

Many manufacturers have made available inexpensive color screens, louvers, and waterproof sockets on adjustable brackets for use with projector lamps (see sketch), further simplifying the floodlighting problem.

The tubular-shape lumiline lamp has recently been made available in inside-coated colored bulbs — red, orange, straw, green, blue, and surprise pink. They can now be used out of doors and are excellent light sources for continuous lines of light or to illuminate multiplane scenes and long candles made of Cel-O-Glass or other plastic materials. The new fluorescent lamp is not recommended for general outdoor use.

An entire building can be outlined with colored lamps, as shown in one of the small photographs. The warm glow of electric candles in all windows and the lighted medallions and large

FOR EVERY *Better Light-Better Sight* PROGRAM

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Reflecting surfaces that meet the requirements of every lighting job; you can get them with Alzak Aluminum Reflectors, with diffuse or specular surfaces, and combinations of the two. There are no limitations on reflector shapes.

Alzak Reflectors give you the most in lighting efficiency. A lasting, high reflectivity is obtained by a special electrolytic treatment of Aluminum sheet. The smooth, oxide coating of glass-like hardness will not chip and doesn't scratch easily. Cleaning is no problem; simply wash with soap and water.

Some Alzak Reflectors are intended for indoor use. Others withstand out-of-door exposure and the corrosive conditions encountered in certain industrial processes. Whatever your use, be certain that you obtain the right Alzak finish for each job.

We do not manufacture reflectors. Manufacturers who are licensed under Aluminum Company of America patents can advise you and supply your needs.

ALCOA

You can identify a genuine Alzak Reflector by a label affixed to it by the manufacturer. This lists the patents protecting the processes that assure uniform, high quality workmanship. Look for that label when you are buying reflectors.

ALUMINUM COMPANY OF AMERICA
1945 GULF BUILDING • PITTSBURGH, PA.

wreath at the main entrance, together with the star above the flagpole, and the lighted shrubbery, all serve to complete the composition. Less elaborate, but unique, is the small industrial building also shown, where brightly lighted wreaths break a simple frieze made up of lamp-studded garlands. Dignity and appropriateness are apparent in the simple Christmas decorations on this building.

In designs where long strings of individual lamps, or evergreen trees studded with small lamps, are outstanding features, a measure of caution must be observed. Hit-or-miss intermingling of various colors of lamps produces an undignified appearance not in keeping with the spirit of Christmas, and should be avoided. Trees all of one color, garlands of only one color, and wreaths also of a single color, are to be preferred. If several colors are desired in the case of garlands, they should be grouped in blocks of several feet each, instead of promiscuous intermingling.

Streets that Reflect the Spirit of Christmas

Tying individually decorated buildings together into one grand Christmas display and literally blanketing a city or town with the spirit of Christmas, are the street decorations. Lamp-studded garlands, ready-made lighted stars, diamonds, or other geometric forms (see large photograph) stretched on guide wires from building surface to building surface, or from lamp standard to lamp standard, compose the most frequent display for business streets. More elaborate displays in the larger cities, however, often consist of ingeniously designed Cel-O-Glass figures and plaques, impressionistic metal trees, and similar unique displays. Most often, these more elaborate displays are concentrated on street-lighting standards because of the easy support offered and the electrical service readily available at such locations.

Elaborate displays are not always required; simple designs using traditional symbols that are bright and colorful, distributed the entire length of a main business thoroughfare, are more effective than more showy displays concentrated at only a few points.

The attractive Christmas decorations on the façade of this store lose some of their effect owing to the absence of a softly illuminated background. Good daytime appearance is obtained by the use of evergreen garlands concealing lamp wires

Why Not a Contest?

"A Christmas for Everybody" as a result of civic outdoor decorations rarely springs up spontaneously, but is often the result of hard work by unselfish men and women with pride in their community and a full measure of the spirit of sharing their pleasures with the less fortunate. Once started, the idea gains momentum each year, as proved by the experience of the Junior Chamber of Commerce of the United States, which has sponsored Christmas lighting contests in several hundred communities in the Northwest.

A Christmas lighting contest is one sure way to get started. Expensive prizes are not required, pride in achievement being the best prize after all. Various classifications based on the financial status of entrants and types of industries and busines, participating should be carefully worked out to suit local conditions, so that the greatest number of citizens will be encouraged to enter. Newspaper publicity always results from newspaper interest in all forms of civic betterment, and organized civic clubs often take over the entire program as part of their civic activities. Outside help is available also through local electric service companies and other members of the electrical industry.

There can be no greater Christmas gift than the knowledge that as a citizen of a progressive community, you have been instrumental in making it glow and sparkle at Christmas time—especially in 1940 Style.

Strings of Colorful Lamps at Left, and Floodlighted Trees at Right

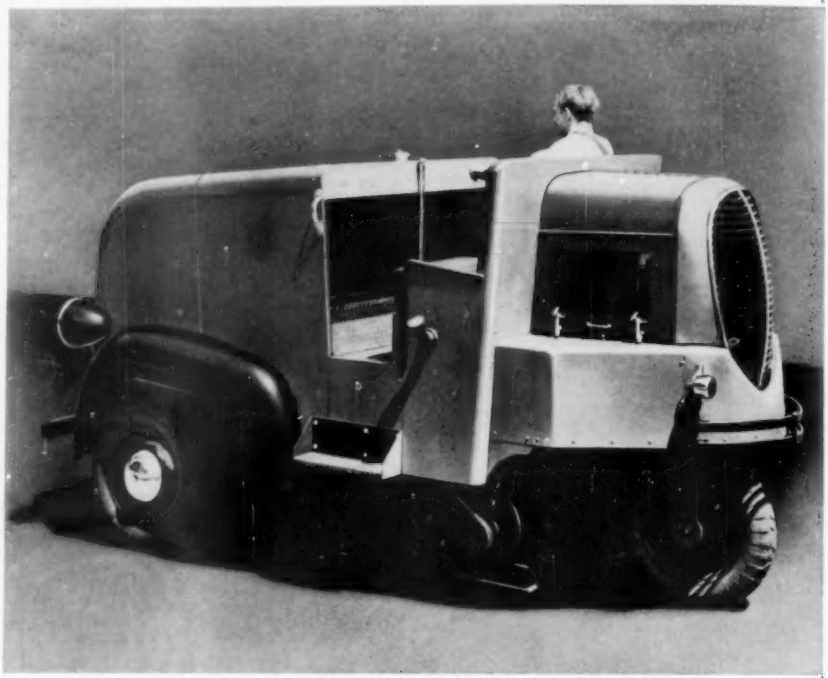
Next Month

Harry G. Van Wagnen,
Mayor, Lorain, Ohio,
Charles P. Ismon,
City Manager, Jackson, Mich.
describe modern street lighting in their cities.

The New Van Dorn Sweeper

Collects and Packages Dirt!

Now even dirt comes in a handy package. This new unique "dirt-packaging" feature has won the approval of health and sanitation officials, offers an entirely new plan for the disposal of refuse. Removable containers may be placed along the curb at convenient points for the attention of the regular rubbish collection crews. No brooms or shovels required to complete the sweeping job. No piles of dirt in the street.



THE VAN DORN IRON WORKS CO. MAKERS OF STEEL AND IRON PRODUCTS FOR MORE THAN 65 YEARS **Cleveland, O.**

IT WON'T BE LONG NOW

—and when the cold winds are blowing, you'll feel mighty glad you installed those

FEDERAL FROST PROOF METERS!

— Not only are they frost-proof; —

They are fool-proof, reliable, accurate registers, giving faithful day-in-and-day-out service, for years on end.

We manufacture: disc, current, disc-compound, current compound meters and controlling valves; heavy-duty Federal frost-proof and standard Federal frost-proof meters, solid or split case, open or oil-enclosed gear trains — all fine, dependable guardians of water revenue.

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Don't Neglect Residential Street Lighting

By A. F. DICKERSON
Manager, General Electric Lighting Division, Schenectady, N. Y.

CONSIDERABLE emphasis has rightly been placed on the need for improvement of street-lighting systems along the heavy-traffic routes. However, when considering street-lighting modernization, municipal officials should not neglect to survey systems in the strictly residential areas where night traffic and accidents may be comparatively slight.

From the National Association of Real Estate Boards comes the comment that "people buy property more readily where the streets are well illuminated, and they prefer to build on bright, cheerful streets. There is also a decided tendency for those who rent to select sections of a community where adequate lighting has been installed."

Secondly, there is the crime element, which may include purse snatching, personal assault, burglary, or even murder. J. Edgar Hoover, Director of the Federal Bureau of Investigation, explains that:

"It stands to reason that since secrecy is a vital element in the successful perpetration of a criminal act, darkness contributes materially to that success. It is also true that a large portion of our crimes are committed during the night. Consequently I believe that if all streets could be well lighted it would tend to decrease crime."

Residential streets are for the most part the dark streets of the community.

South Main Street in Beautiful Geneva, N. Y., Illuminated by Modern Luminaires on Union Metal Poles

RECOMMENDED LIGHTING FOR PAVEMENT 60 FEET WIDE

	Residential		Light Traffic		
	Light	Dull Black	Light	Darker	Black
Lamp size, lumens	2,500	6,000	4,000	6,000	10,000
Spacing, feet	200	200	150	150	150
Height, feet	18-25	18-25	25	25	25
Lumens per square foot	0.15	0.30	0.20	0.30	0.50

Luminaires of the modern pendent reflector-refractor, or deflector, types are recommended for residential street lighting. The efficiency of these luminaires is two to three times greater than former equipments used. In outlying areas where it is advisable to use radial-wave reflectors, the type with the shading reflector is recommended. This shading type reflector directs approximately 25 per cent more light over the street than a flat radial-wave reflector. It also eliminates many complaints from adjacent property owners due to objectionable direct light from the exposed lamp. The table outlines modern requirements for light-traffic streets.

Lighting in Los Angeles

THE CITY OF LOS ANGELES, CALIF., is lighted by 16,261 "utilitarian street lights," consisting principally of 7,864 of 20 amperes and 6,000 lumens, and the following numbers of 6.6-ampere lamps: 3,187 of 1,000 lumens, 2,026 of 2,000, 1,735 of 4,000, and 1,368 of 2,500 lumens. There are also 74 sodium-vapor lamps, chiefly at intersections.

In addition there are 71,876 "electrolier street lights," of which the principal groups consist of 29,830 of 4,000 lumens, 21,717 of 2,500 lumens. There are also 46 mercury-vapor lamps.

Overhead street lights are installed by the Department of Water and Power at the request of the Board of Public Works. Ornamental lights are installed under the direction of the Board of Public Works by assessment districts, the property owners paying a major part of the cost. The Department of Water and Power maintains these lights and furnishes energy.

Calculating Lamp Values

A LAMP VALUE CALCULATOR that tells you what discount you should receive on any make of lamp if you know (1) the discount on Mazdas, (2) about how much less efficient the other lamp is, and (3) the price you pay per kwh, has been devised by the Westinghouse Lamp Division, Bloomfield, N. J. If the Mazda discount is 24 per cent, and the competing lamp is 4 per cent less efficient, it takes 5 seconds to find that the discount should be 81 per cent on a 100-watt size. Turn over the little cardboard slide-rule-type calculator and you can read off a loss of 12 cents in kwh wasted in 1,000 hours by that 4 per cent inefficiency factor. If users of incandescent lamps in quantity have gathered a working idea or have authoritative test information of the relative efficiency of various makes of lamps, the Lamp Value Calculator translates those differences in efficiencies into money lost.

Bus Drivers Need Lighted Highways

BETTER LIGHTING FOR CITY STREETS and danger zones on heavy traffic highways is needed for the protection and convenience of night traffic, says A. V. Thompson, traffic expert, of San Francisco, who has just completed a transcontinental bus trip of several thousands of miles.

According to Mr. Thompson: "The modern well-lighted communities prove the exception, and street lighting on an average is inadequate. In regard to the open highway, there is immediate need for scientific lighting on the heavy traffic routes, *particularly at intersections and on the sharp vertical curves.*"

Bus drivers told Mr. Thompson that they experience great relief when they leave dark highways and enter properly lighted zones, especially on nights when mists reduce visibility.

From Chemical Feeders To Windshield Wipers

Diaphragm Pump patent interference between

TRICO PRODUCTS CORP.

(World's largest manufacturers of windshield wipers)

AND

% PROPORTIONEERS, INC. %

(Chemical Feeder Headquarters)

has been amicably settled. Trico Products Corp. has conceded % Proportioneers' % priority — % Proportioneers, Inc. % has licensed them as the *only* manufacturer of diaphragm type pumps as yet authorized to use % Proportioneers' % patented long-life diaphragm under U. S. Patent 2,185,784, issued Jan. 2, 1940.

To date, no manufacturer offering positive displacement chemical feed pumps to the water works and sewerage field has been licensed.

● Sound fundamental design uses only the minimum number of parts necessary to get the most dependable operating satisfaction. Count the number of parts on Chlor-O-Feeder, Amm-O-Feeder, and other % Proportioneers' % "Little Red Pumps"—you will find fewer parts than on pumps complicated with "patent dodging" problems. ● Patent 2,145,566 covers % Proportioneers' % improved structural features now recognized as essential in attaining accurate dependable hypo-chlorination, aqua ammoniation, and other chemical feeding at low cost. ● Patent 2,185,784 covers % Proportioneers' % exclusive diaphragm with annular bead or corrugated construction assuring long lasting and accurate feeding. ● Patent Pending on % Proportioneers' % "See Thru" construction. ● Pump manufacturers interested in license or information on Patents 2,185,784 or 2,145,566, or other % Proportioneers' % granted or pending patents, please address inquiries to:

Above — Midget Chlor - O - Feeder with See-Thru Reagent End.

Right — % Proportioneers' % Famous Long - Life Diaphragm.

JEFF CORYDON, President

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"Chemical Feeder Headquarters"

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The correct and economical way to set water meters in basements. Puts the meter in the correct position at the proper height. Easily installed and saves time and trouble in meter changing.

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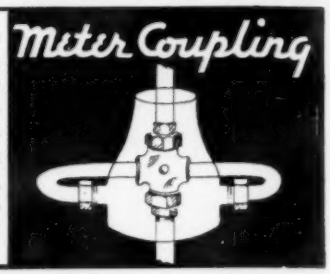

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Your Gracious Host.. From Coast to Coast

In NEW YORK..

The Gotham

In CHICAGO..

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The Blackstone

In LOS ANGELES..

The Town House

In BELLEAIR, FLA..

Belleview Biltmore

KIRKEBY HOTELS

Improving Municipal Administration

Current Items from the Public Administration Clearing House

Five Cities, Three States Charge for Police Radio Service

AT LEAST FIVE CITIES AND THREE STATES operating police radio systems charge for radio messages transmitted to police cars of other cities and suburbs which do not operate their own transmitters, the International City Managers' Association states. The cities are Cleveland, Detroit, Toledo, Akron and Providence; the states are Connecticut, Massachusetts and New Jersey.

Cleveland charges East Cleveland 42 cents for each call transmitted to East Cleveland police cars. East Detroit pays Detroit 35 cents a call; the sheriff's office of Lucas County, Ohio, pays Toledo 50 cents a call, with a minimum of $25 a month; and Akron charges 35 cents per message transmitted to Barberton, Cuyahoga Falls, and the sheriff's office of Summit County. Providence makes charges on calls to police cars of several surrounding communities.

Communities served by the Connecticut, Massachusetts and New Jersey state police radio systems are charged certain percentages of operating costs.

New Plan for Dealing with Tax-Deeded Land

CALIFORNIA, which during the past six years has collected $370,283 in rentals on land taken over for non-payment of taxes and returned about $7,500,000 worth of property to the tax rolls, is preparing to set up a new system of dealing with the problem of tax-deeded lands, according to information from the National Association of State Auditors, Comptrollers, and Treasurers.

Under a law which takes effect early next year, the rental of tax-deeded property will be used to help cities and counties return such property to the tax rolls. Such rentals, according to the California State Controller, have been paying the cost of administering the 3,000,000 acres of farm and ranch land and the 150,000 city lots deeded to the state for non-payment of taxes, and in addition have contributed materially to the state treasury.

Tax-deeded lands, under the new system, will be classified into three groups: those suitable for sale to private owners; those suitable for public use, such as potential park or playground areas; and waste lands which cannot produce enough revenue to be self-supporting. The original owner of such property, under the new plan, will be permitted to bid in the tax sale, even if he has failed to redeem the property. This permission is not now given him.

Much of the tax-deeded land has been burdened with overlapping assessments for improvements, or with irrigation and reclamation district assessments, in addition to county and state taxes. The State Controller and his district supervisors have been cooperating with cities and special districts to arrange the refinancing of their bonded indebtedness.

Before 1925 few lands were deeded to the state for non-payment of taxes. The largest number in any one year was in 1932, when there were 325,000 sales to the state. In some counties, the assessed value of property owned by the state became as much as 30 per cent of the total assessed value.

How Winston-Salem Uses or Sells Tax-Delinquent Land

SALE OF 169 TAX-FORECLOSED PROPERTIES for $76,952 has resulted from the operation by Winston-Salem, N. C., of a new plan for disposal of such lands, the Municipal Finance Officers Association of the United States and Canada reports. Building permits totaling $125,840 have been issued for improvements on the properties, and future income to the city from taxes on the re-sold properties will amount to about $3,000 a year.

Winston-Salem owned about 2,000 parcels of tax-foreclosed land in June, 1939, when a new real estate committee was appointed and the present land-disposal plan worked out. The plan has been in effect since September of last year, and operates as follows:

The city keeps a duplicate set of tax maps which are used as city property maps, and on which are recorded in color all city-owned property. After the city receives the deed to tax-foreclosed property, the building inspector determines whether the building should be demolished, or what repairs are needed. Each lot is checked also to see whether it may be needed in the future for public improvement projects. Large tracts of land or groups of lots are studied for possible community park sites.

All city-owned property not wanted for governmental purposes is listed for sale with the Winston-Salem real estate board, which receives established rates for disposing of the land. An independent appraisal committee is appointed and paid a nominal fee for each parcel appraised. Each lot is cleaned, surveyed and marked off; and attractive financial terms are offered to purchasers. Before any property is sold, however, the former owner is given an opportunity to repossess it through payment of back taxes. When properties are ready to be sold, descriptions are distributed to the city's realtors. When an offer for a piece of property is received, the property is placed on auction, and if no better bid is made it goes to the original bidder.

In cases where land titles may be considered defective because the former owner could not be served legal notice of foreclosure, the lots when sold are registered under the "Torrens system," by which the title is guaranteed by the state.

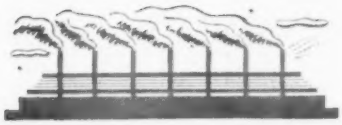
The Municipal Bond Market

Recent sales of new issues from November numbers of *The Bond Buyer:*

Amount	Borrower and Purpose	Rate (%)	Term (Years)	Basis (%)
$ 390,000	Dane Co., Wis., Highway Improvement	.70	3-16 Avg.	.61
120,000	Chelsea, Mass., Relief	1.25	1-10 Ser.	1.13
375,000	Anderson, Ind., Electric Utility Revenue	1.5	5-25-6-5 O.-A. Prem.	1.34
199,000	Johnstown, Pa., School Dist., Refunding	1.5	5-5 Avg.	1.40
100,000	Manchester, N. H., Municipal Improvement and Equipment	1.5	10-33 Avg.	1.48
500,000	Camden, N. J., General	1.75	1-5 Ser.	1.70
325,000	Sandusky, Ohio, Sewer	1.75	2-26 Ser.	1.73
1,500,000	Cincinnati, Ohio, Flood Protection	2.75	2-31 Ser.	2.75
8,245,000	Mobile, Ala., General Refunding	3.5	6-20.85 O.-A.	3.45
100,000	Troy Tp., Mich., 1940 Refunding	3.5	4.5-6.33 O.-A.	3.5
268,000	Pinellas Co., Fla., Water Revenue Certificates	4	18.75 Avg.	4
220,000	Picayune, Miss., Natural Gas Transmission and Distribution Revenue	4.25	12 Avg.	4.25

Need Industrial Waste Cause *Short Sewer Life?*

Installed under a main line railroad near the seacoast, this ARMCO Asbestos-Bonded Pipe discharges corrosive waste from a large industrial plant. A stern test of material durability and structural strength.



It's true that sewer materials often fail quickly when handling industrial wastes. Yet there *is* a way to extend sewer life under these conditions. A special bituminous coating has proved excellent protection against corrosion. The only problem was how to obtain positive adhesion between coating and sewer.

After years of research ARMCO engineers found the answer in an asbestos-bonding process. A layer of asbestos felt is used to permanently bind the full bituminous coating to the galvanized pipe. This acid-resisting coating on ARMCO Sewer Pipe assures complete protection against corrosion. And a thick, smooth pavement of the same material safeguards the bottom from erosion. ARMCO Pipe also has the advantage of great structural strength, derived from its flexible, corrugated design—proved in more than 34 years of service.

Thus you can readily see why ARMCO Asbestos-Bonded Sewer Pipe lasts longer and costs less to maintain even in the severest service. And since ARMCO Pipe can solve your *worst* sewer problems, naturally it will be that much more durable under ordinary conditions. Try ARMCO Asbestos-Bonded Pipe on your next sewer project. You'll be repaid by years of useful, unfailing service. Why not write us about your potential needs or see the local ARMCO man. ARMCO DRAINAGE PRODUCTS ASSOCIATION, 5045 Curtis Street, Middletown, Ohio.

ARMCO ASBESTOS-BONDED PIPE

ORIGINATED AND DEVELOPED BY ARMCO ENGINEERS

Mention THE AMERICAN CITY—it helps.

Prepared by
FRANK B. WILLIAMS
Author of "The Law of City Planning and Zoning"

Zoning and Planning Notes

With the cooperation of
EDWARD M. BASSETT
Author of "Zoning" and of "The Master Plan"

Variance—Remedy

CALIFORNIA.—*Rubin v. Board of Directors of City of Pasadena*, 104 P. 2d, 1041 (Supreme Court, August 23, 1940).—An application for a variance precludes the applicant from challenging the constitutionality of the ordinance in that proceeding, but does not bar him from claiming unconstitutionality in another proceeding, notwithstanding that the same type of evidence is used in both proceedings.

EDITOR'S NOTE.—The law with regard to the method of raising the question of constitutionality as stated in this case, is in accord with the well-settled rule. See Bassett, Zoning, pp. 162, 172.

Presumption of Validity

NEW YORK.—*Brown v. Village of Owego*, 21 N. Y. S. 2d, 905 (Supreme Court, Appellate Division, July 2, 1940).—The property of the plaintiff is in a residential district. The ordinance has been in effect, unquestioned, for many years. The plaintiff did not take steps to secure a variance for undue hardship, but asks that it be declared unconstitutional as to her. No board of appeals has ever been appointed, and plaintiff made no attempt to have the zoning ordinance amended to secure the appointment of such a board.

Held that the fact that the ordinance has long been in effect creates a presumption that it is valid and constitutional. The fact that she could sell her property for much more for use as a gas station than as a residence does not show that the ordinance is unreasonable.

Violation of the zoning ordinance by others cannot be used by plaintiff as a basis for a finding that the ordinance is invalid, as the question is not whether some one else has been favored but whether the plaintiff has been illegally oppressed. And the plaintiff cannot complain that no zoning board of appeals has been appointed.

Area—Motive of Purchase

NEW YORK.—*Shorehaven in Manhasset, Inc. v. Village of Great Neck Estates*, Supreme Court, Queens County, reported in *New York Law Journal*, September 25, 1940, page 1940.—This is an application for mandamus to compel the issue of a building permit. The applicant is the owner of land in a one-family residence district. The ordinance requires in this district a minimum area of 12,000 square feet for such a building. The application was denied on the ground that a narrow strip of land irregular in shape was purchased solely for the purpose of fulfilling the requirements of the ordinance. *Held* that the permit must be issued. The only requirement of the ordinance is that the building be erected on a lot of a given area. There is no requirement that the building shall occupy a specified portion of the lot or that the lot itself shall be of any specified shape. The petitioner's motive in assembling the plottage is of no importance. Important only is the fact that it has complied with the minimum area requirements. The village, in taking exception to the shape of the lot, on the belief that it was assembled in contravention of what they term the spirit of the ordinance, has assumed legislative powers never given to it. Judicial sanction of this practice would result in the intolerable situation wherein the landowner of the village and prospective purchasers of land would be left completely at the mercy and subject to the whim of a village.

EDITOR'S NOTE.—The municipal authorities can guard against any dangers to health and welfare due to the improper shape of building lots by proper court and yard provisions in the zoning ordinance.

Streets — Abutters

NEW YORK.—*Russo v. Morgan, Commissioner of Markets of City of New York*, 21 N. Y. S. 637 (Supreme Court, May 28, 1940).—Alfred Russo and others were dealers in fish, which they sold from stands in the roadway of South Street in New York City under permits from the Department of Markets of the City of New York. They leased a small space in one of the upper floors of buildings abutting on South Street called offices. No sales of fish were made in the buildings, and any storage of fish there was slight. The plaintiffs were not the only persons selling from such stands; the entire roadway in front of the block in question was and is filled with such stands, forming part of what is popularly known as "Fulton Fish Market."

Recently the city adopted new rules governing this market, providing that applicants for permits must be owners or tenants of the whole or part of "the store in front of which the stand is situated"; that the store must be on the street level and devoted exclusively to the sale of fish at wholesale; and that the fact that the applicant is the owner or tenant of an office in the premises in front of which the stand is located shall be insufficient to entitle the applicant to a permit for a stand in front of such premises. Under these rules the permits were revoked.

Undoubtedly the city could absolutely prohibit the use of a public stand as a market; and perhaps might be compelled to do so if persons specially damaged thereby should request it. Here, however, the owners of the abutting property not only acquiesced in such use but believe that it enhances the value of their property. And so long as the city elects to permit the use of the street as a market, it cannot discriminate against some of the abutting owners or tenants.

The owner of property abutting upon a public street, even where he does not own the fee of the street, has special rights in the street in addition to those he enjoys in common with all other citizens. Such special rights are property of which he cannot be deprived without compensation,* and include not only light, air and access but also the enjoyment and use of whatever is permitted or maintained by public authorities as a part of the street.

The constitutional requirement of the equal protection of the law undoubtedly permits a wide range of discretion in classifying both persons and things, and the requirement is not violated by such classification so long as persons and things similarly situated are similarly treated. But the classification must not be arbitrary and must rest on some good ground of difference having a substantial and reasonable relation to the accomplishment of a legitimate public purpose and that is true even where the regulation is one dealing with the use of city streets and highways.

The plaintiffs are therefore entitled to a judgment declaring that so much of the new rules as restricts the issuance of permits to owners or tenants of street-level stores arbitrarily discriminates against tenants of the upper floors, and deprives them of property rights incident to their tenancy of these upper floors and thus deprives them of equal protection of the laws, and of property without due process of law in violation of the 14th Amendment of the Constitution of the United States.

* EDITOR'S NOTE.—Abutters on "freeways" have no such rights, but are compensated for the loss of them.

Board of Appeals—Statement of Reasons

RHODE ISLAND.—*Berg v. Zoning Board of Review of City of Warwick*,* 12 A. 2d, 225 (Supreme Court, March 25, 1940).—Petitioner's property was located in a residential district. On his property was a pond. He applied to the Zoning Board for a special exception to permit his conducting a bathing beach on his land. There was a transcript of the hearing, but in its decision denying the application the Board stated no reasons. The owner brought certiorari. The Court held that though all the testimony brought forward at the hearing might be in the record before it, still it (the Court) could not determine the Board's reasons, and, where the Board failed to state its reasons, the Board's decision must be reversed and the case referred back to the Board for a hearing *de novo*.

* From *News Letter* of American Society of Planning Officials.

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Water meter value is convincingly provable without magic or hocus-pokus means.

You can *see* all there is to a meter,—how it is built, how it works, how it stands up in service, and how it pays out as a long-time, revenue-producing investment.

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If you haven't had occasion to look into one lately, perhaps this is the right time to review your entire water meter situation.

We'll send proof you can *see*, if you say so.

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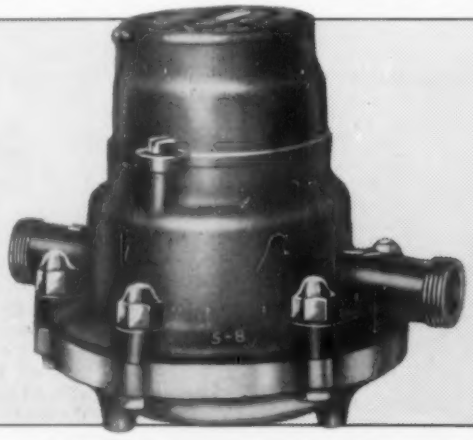
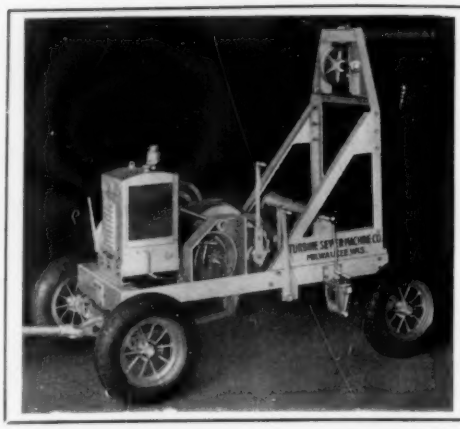


AMERICAN and NIAGARA WATER METERS



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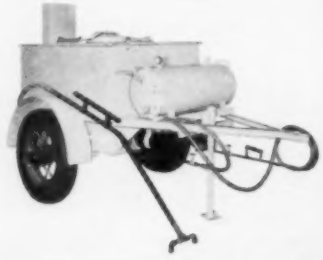

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Municipal Law Notes and Decisions

Prepared by National Institute of Municipal Law Officers, Washington, D. C.
John A. McIntire and Charles S. Rhyne, Legal Counsel

Anti-Noise Ordinances and Use of Sound Trucks

Several recent cases arising as a result of activities during the recent political campaign have been decided concerning the validity of ordinances prohibiting or regulating the use of loudspeakers and amplifiers on sound trucks. In the case of *Maupin* v. *City of Louisville*, decided October 25, 1940, the ordinance of the city of Louisville prohibiting the use of sound trucks for advertising purposes on the city streets except upon a specific license from the Police Department has been sustained. An earlier case involving the same parties upheld the validity of the Louisville ordinance regulating, rather than prohibiting, the use of such sound trucks. *Brachey* v. *Maupin*, 277 Ky. 469, 126 S. W. (2d) 881, 121 A. L. R. 969 (1939).

An appeal has been taken from a decision of the New York Supreme Court ordering the Police Commissioner of New York to issue licenses to an individual in order to permit him to use sound trucks in connection with the political campaign for the election of Willkie and McNary. Under the Administrative Code of the city of New York the Police Commissioner has sole discretion in issuance of permits for the use of sound devices on the streets of the city. *Baldwin* v. *Valentine*, (N. Y. Sup. Ct. N. Y. County 1940).

In the *Brachey* v. *Maupin* case, *supra*, the Court concluded that a sound truck was a potential nuisance and when in use was an actual nuisance. The Court held that there could be no doubt of the right of the City Council to enact the ordinance as a police power regulation for the protection and safety of citizens. The Court there accepted the city's evidence that sound trucks increased hazards on the city streets and affected the well-being of persons within the restricted areas. The prohibition of the use of trucks during ordinary sleeping hours has also been held to be a reasonable exercise of police power. See *People* v. *Caponigri*, 6 N. Y. S. (2d) 577 (Magistrate's Court for the Borough of Brooklyn, 1938).

In some cases the courts have upheld municipal ordinances prohibiting advertising of other than the truck owner's own products by advertising signs upon the outside of trucks using the public streets. *People* v. *Kearns*, 5 N. Y. S. (2d) 590 (N. Y. Sup. Ct. 1938); *Noll* v. *Griffin*, 100 Fla. 152, 129 So. 511 (1930); *Fifth Avenue Coach Co.* v. *New York City*, 221 U. S. 467, 31 Sup. Ct. 709, 55 L. ed. 815 (1911); *Chicago Park District* v. *Canfield*, 370 Ill. 447, 19 N. E. (2d) 376 (1939). See generally McQuillin, Municipal Corporations, § 988.

Assessments—Proof of No Benefits

An assessment by the town of North Castle, Westchester County, N. Y., to meet the cost of a sanitary sewer legally unavailable for disposal of storm water or surface water is of no benefit to land used exclusively by a railroad for its right-of-way. Proof of the use of the land exclusively as a right-of-way for 90 years under a lease with 300 years to run, and no plan contemplated by the railroad for curtailment of service, establishes the nature of the use and no benefit and invalidates the assessment. *People ex rel. New York Cent. R. Co.* v. *Limburg*, 28 N. E. (2d) 865 (N. Y. 1940).

Bonds—Special Assessment Fund

The city of Chester, Pa., having issued improvement bonds payable from a special assessment fund is under an implied contractual obligation to exercise diligence and is liable to bondholders for breach of such obligation. *Bessemer Inv. Co.* v. *City of Chester*, 113 F. (2d) 571 (C.C.A. 3d, 1940).

Civil Service—Abolition of Office—Lack of Good Faith

The city of Elmira, N. Y., in abolishing the office of Engineer acted in bad faith and for the sole purpose of securing the removal of the incumbent of that position. The services performed by him were performed by individuals in substantially the same way but under different titles. The Court held the Engineer entitled to reinstatement. *Wipfler* v. *Klebes*, 22 N. Y. S. (2d) 1 (N. Y. Sup. Ct. 1940).

Eminent Domain—Delegation to Private Corporations

A pipe line company has no power of eminent domain in the absence of express legislation granting it such a power in the public interest. The general statute providing the general method of condemnation of property relates only to procedure where the power exists. *Botts* v. *Southeastern Pipe-Line Co.*, 10 S. E. (2d) 375 (Ga. 1940).

Firemen's and Policemen's Pensions—State System Versus Local System

While the state of Ohio must provide under the constitution for the organization of cities by general law, etc., and municipal police regulations must yield to inconsistent general state law, nevertheless a local system dealing with firemen's pension funds and the police relief fund differing from the state system will be given effect provided rights of employees under the former system are preserved. The state law in question was interpreted as not mandatory. *City of Cincinnati* v. *Gamble, State ex rel. Ellis, City Sol.* v. *Steward*, 28 N. E. (2d) 676 (Ohio, 1940).

Junk Yards—Regulation to Control Unsightliness

An ordinance regulating the size of ground area and street frontage to be used as a motor-vehicle junk yard and requiring the yard to be completely enclosed with a fence 8 feet high and of such construction that the interior of the yard could not be viewed from the exterior is invalid. *Vassallo* v. *Board of Com'rs of City of Orange*, 15 A. (2d) 603 (N. J. 1940).

Local Legislation—Effect of Recitals

Recitals accompanying the council resolution of the city of Medford are a part of the resolution and usually state the facts upon which the resolution is based or declare the purpose for which it is to be adopted, or both. Such recitals may not be ignored in the interpretation of the resolution. *Lake Superior District Power Co.* v. *Public Service Commission*, 294 N. W. 45 (Wis. 1940).

Municipal Corporations—Port of New York Authority

The Port of New York Authority does not have powers of local government and is therefore not a municipal corporation. It does perform governmental functions which project beyond state lines and it is therefore a sovereign agency of both the states of New York and New Jersey and is immune from suit without its consent. *Howell* v. *Port of New York Authority*, 34 F. Supp. 797 (D. C. N. J. 1940).

Obstructions on Sidewalks

A store owner's display of articles of furniture in front of store was not a "stand," prohibited by city code, as "stand" is a framework on which something is supported or displayed, as articles in museum or goods in store. *People* v. *Gerand*, 21 N. Y. S. (2d) 428 (City Magistrate's Court of N. Y. City, 7th District, Borough of Manhattan, July 11, 1940).

Price Fixing—Ticket Brokers—Due Process

The statute regulating activities of brokers of theater tickets within the city of New York is not unconstitutional as arbitrary and confiscatory. The decision of the United States Supreme Court in *Tyson* v. *Banton*, 273 U. S. 418, is not binding on the New York Courts as to the validity of a New York statute passed subsequent to that decision in view of the decision of the United States Supreme Court in the case of *Nebbia* v. *People of New York*, 291 U. S. 502. *Kelly-Sullivan, Inc.*, v. *Moss, Comm'r of Licenses of New York City*, 22 N. Y. S. (2d) 491 (Sup. Ct. N. Y. County 1940). See *George Washington Law Review*, December, 1940, for an annotation of this case.

Salaries—Compensation for Additional Services

In an action against the city of Chicago to recover compensation for additional services rendered by plaintiff's assignor as a valuator of real estate in connection with construction of a subway, plaintiff had the burden of showing that an appropriation has been made by the city for payment of the assignor's additional services in the year or the year preceding that in which services were rendered. A contract for such additional compensation in the absence of an appropriation by the council for such services would be void as a violation of statutes and against public policy. *Harry Goldstine Realty Co.* v. *City of Chicago*, 29 N. E. (2d) 283 (App. Ct. Ill. 1940).

Streets—Obstructions—Abutting Owners

Where the placing of obstructive curbings on a street inconveniences the abutting owner but is necessary as a reasonable exercise of police power in the interests of public safety, a court of equity will not grant a mandatory injunction to compel removing of the curbings but will remit the abutting owner to his action at law for damages since the right of a property owner as an abuttor is always subject to the right of the state to regulate and control the highway for the benefit of the public. *Calumet Federal Savings & Loan Assn. of Chicago* v. *City of Chicago*, 29 N. E. (2d) 292 (Ill. 1940).

Taxation—Licenses—Uniformity

An ordinance establishing different measures for a tax upon automobile dealers who had not been engaged in business during the preceding calendar year, and upon automobile dealers who had been engaged in business during the preceding calendar year, is unconstitutional and void. The ordinance violates the state constitutional provision for uniformity of taxes. The sub-classification of dealers not engaged in business during the preceding year is not sufficiently different to justify a different rate or measure of tax. *City of Cape Girardeau* v. *Fred A. Groves Motor Co.*, 142 S. W. (2d) 1040 (Missouri 1940).

Tort Liability—Drains—Surface Water

The city of Columbia, S. C., constructed an embankment or roadbed and failed to provide drains for surface water, which was thereby caused to flow upon the plaintiff's property. These facts are held to present a cause of action against the city for breach of its statutory duty to provide drains for surface water. *Macedonia Baptist Church* v. *City of Columbia*, 10 S. E. (2d) 350 (S. C. 1940).

Trailers—Licenses

An ordinance penalizing the owner of the premises and the owner of the trailer for the parking of a trailer upon premises within a town without a license is invalid because of a lack of relation between the subject of the license and the health, comfort, safety and welfare of society. *Boxer* v. *Town of Harrison*, 22 N. Y. S. (2d) 501 (Westchester County, 1940).

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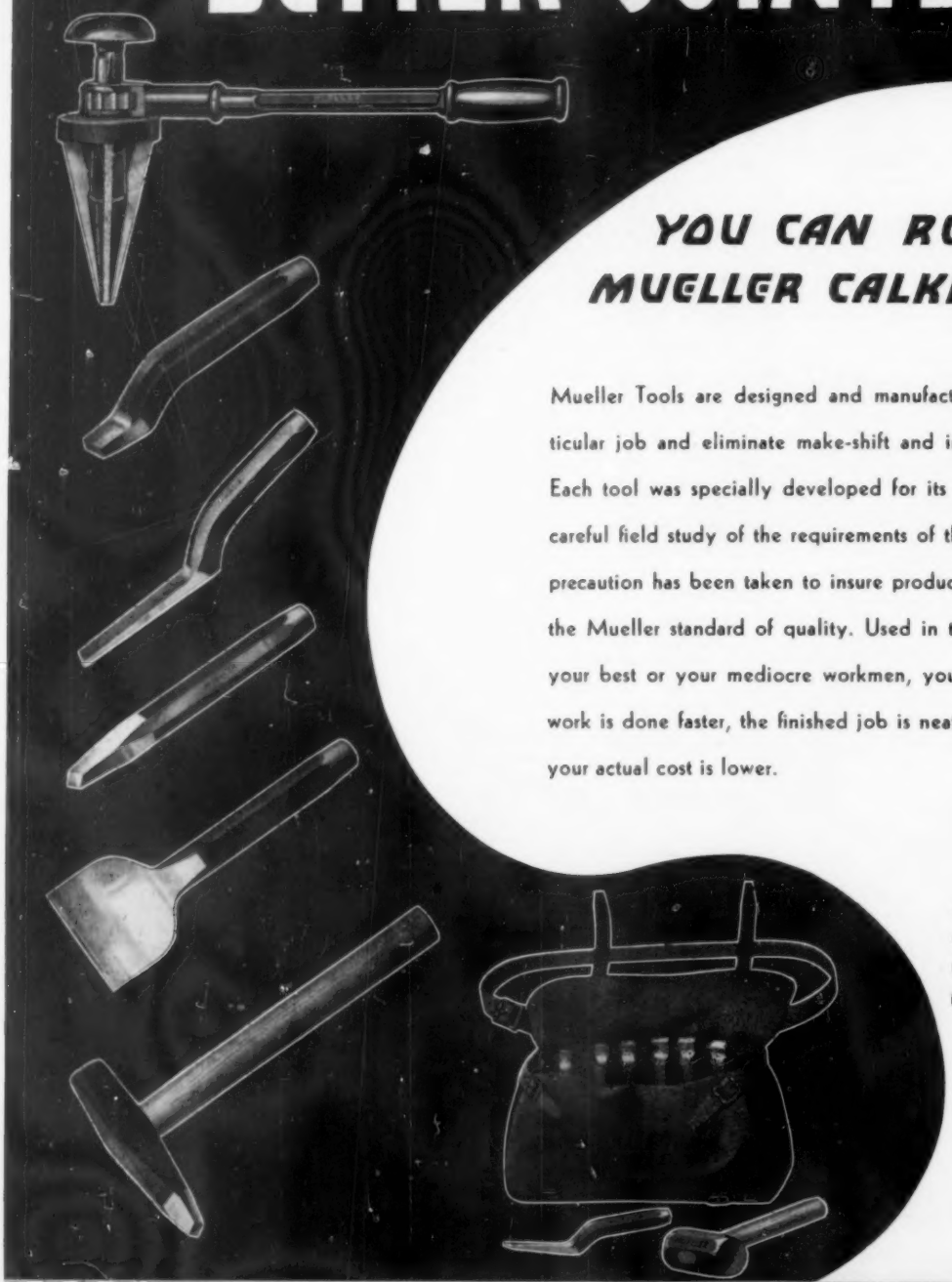

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Municipal and Civic Publications

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Publications on Defense

Three publications on defense, of interest to city officials, have been published by, and can be obtained from, the Public Administration Service, 1313 E. 60th St., Chicago, Ill.

The British Defense Program and Local Government.—By Don K. Price and James L. Sundquist, for the American Municipal Association, 1313 E. 60th St., Chicago, Ill. 1940. 56 *pp.* 75c.

Not a comprehensive study of the subject, this pamphlet compiles material from British periodicals, documents, and reference works of most probable interest to American local governments. Taken from material published largely before the invasion of Holland and Belgium, it describes the effect of a national defense program, rather than of active warfare, on municipal activities and personnel. Chapter headings: Local Government Organization and Powers; Finance; Personnel; The Protective Services; Public Works; The Social Services; Evacuation Problems.

Administration and Organization in Wartime in the United States: A Bibliography.—Compiled by Dorothy Campbell Culver, Research Assistant, Bureau of Public Administration, University of California. 1940. 17 *pp.* 50c.

This is a selected list of the more important publications on administration and organization in wartime, covering a wide field, and divided under 29 headings, such as agriculture, conservation, food, housing, labor, propaganda, subversive activities, and utilities.

Civil-Military Relations.—Prepared for the Committee on Public Administration of the Social Science Research Council, under the direction of Pendleton Herring, Secretary of the Graduate School of Public Administration, Harvard University. 1940. *vi* + 78 *pp.*

Brief summaries of publications dealing with administrative problems of civilian mobilization.

Filter Washing

The Mechanics of Filter Bed Agitation.—By Fred E. Stuart. Activated Alum Corp., Curtis Bay, Baltimore, Md. 1940. 68 *pp.*

This is a compilation of articles on the newly-developed Palmer Filter Bed Agitator, which were originally presented before technical association meetings of the American Water Works Association. They include: "Clean Filters," by E. C. Goehring; "The Palmer Filter Bed Agitator," by Henry F. Wagner; "Experiences with the Palmer Filter Bed Agitator at Olean, N. Y.," by Joseph E. Rehler; and "The Benefits of Agitation to the Small Filter Plant," by C. E. Palmer.

Plumbing Sanitation

Plumbing and Public Health.—U. S. Public Health Service, Federal Security Agency, Wall, Nassau and Pine Sts., New York. 1940. 118 *pp.* 30c.

Contained in this publication are a brief discussion on water-borne diseases, descriptions of investigations made under Public Health Service of public health hazards due to faulty plumbing in Federal buildings, a discussion of tentative methods to evaluate results of plumbing inspections, and consideration of possible corrective measures.

State Legislation

State Law Index.—Legislative Reference Service, The Library of Congress, Washington, D. C. Apply to Supt. of Documents, Washington, D. C. 1940. *viii*+702 *pp.* $1.50.

This is a complete index to the 24,039 acts and resolutions enacted by the 48 states during the biennium 1937 and 1938. State, year, date of approval by governor, page and chapter, are given for each item. Full cross-references are supplied. This is the seventh volume in the series, which provides a key to the state laws of 1925 to 1938 inclusive.

Sewage Treatment

Sewage-Treatment Works.—By C. E. Keefer, M. Am. Soc. C.E., Principal Assistant Engineer, Bureau of Sewers, Baltimore, Md. First Edition. McGraw-Hill Book Co., Inc., New York. 1940. *ix* + 672 *pp.* $6.00 *from* THE AMERICAN CITY.

Here is the answer to the sewage-works engineers' and operators' prayers, with 609 pages of practical, helpful, understanding text, diagrams and tables on the why's and wherefore's of the operation of a sewage-treatment plant. The book does not stop there, for there are over 60 pages of index with a multitude of cross-references, so that you can find your way around the first time you look in the index. For example, if you are interested in information on the bulking of sludge at an activated sludge plant, you will find it listed under both Activated Sludge and Bulking. The author has not aimed to make this a historical volume covering treatment processes no longer used, nor prophetic in the possibilities of future methods. It discusses in a practical manner those treatment processes that are widely used right now.

This new volume, and the most recent edition of "Analysis of Water and Sewage," by Theroux, Eldridge and Mallmann, from the same publishers, make an unbeatable pair for everyone connected with sewage-treatment plant operation.

Texas College Bulletins

The Texas Engineering Experiment Station, School of Engineering, College Station, Texas, has issued two more bulletins:

A Rational Method of Analyzing Water Rate Structures.—By S. R. Wright, Assistant Professor of Municipal and Sanitary Engineering. 1940. 32 *pp.*

A condensed review of the water-rate question, this manual outlines the different systems now in use, and discusses the various factors involved—classes of rates, parts of a block rate, the various blocks in a rate structure. Recommendations are made for the revision of existing rates and the formation of the rate structure.

Rural Water Supply and Sewerage—Part II: Rural Water Supply.—By E. W. Steel, Head, Department of Municipal and Sanitary Engineering, and P. J. Alwin Zeller, Research Associate, Texas Engineering Experiment Station. 1940. 30 *pp.*

Different types of rural water supply are described and diagrammed in this pamphlet, with recommended standards for construction and use. They include wells of various sorts—dug, driven, bored, drilled; and cisterns; springs; surface water. Discussed also are pumps, water systems, disinfection of wells, disinfection of drinking water, water correction.

Winter Traffic Accidents

Safe Winter Driving—1940 Report, Committee on Winter Driving Hazards.—National Safety Council, 20 N. Wacker Drive, Chicago, Ill. 1940. 32 *pp.*

Motor-vehicle accident death rates run from 20 to 40 per cent higher in the winter months than in the summer. The reasons why this is so are analyzed in this study, which also reports results of a study of skidding and traction tests on smooth lake ice, under different conditions. Recommendations to increase safety of winter driving are made for driving and for highway maintenance.

Traffic Facilitation

Experience of Cities with Painted Traffic Lines.—American Public Works Association, 1313 E. 60th St., Chicago, Ill. 1940. 28 *pp.* 50c.

Summarized in this bulletin is information on the experience of 30 cities with traffic paint, in respect to: special tests; paints used; specifications; application; frequency of repainting; and durability.

Water Used by Hotels

Hotel Engineering—Volume 1, Water Consumption, Cost and Savings.—American Hotel Association, 221 West 57th Street, New York. 32 *pp.* $1.00.

An interesting study of water consumption in hotels, prepared under the direction of Georges C. St. Laurent, Wegg and St. Laurent, hotel consultants, showing the cost of water to hotels, and the reasons, including the introduction of air-conditioning equipment without water-reclaiming facilities and sewer service rates paid by water consumers. Of particular interest to water-works officials is the analysis of how the water used in a hotel is consumed, and comparisons of water consumptions of hotels of different sizes and types.

Refuse Collection Practice

Refuse Collection Methods. Refuse Collection Equipment.—American Public Works Association, 1313 E. 60th St., Chicago, Ill. 1940. 55 *pp.*, 58 *pp., respectively.* 50c *each.*

These are Chapters V and VI of "Refuse Collection Practice," a projected 15-chapter volume which will cover all phases of the problem. The first bulletin on collection methods in different cities in the country describes and analyzes in considerable detail, with action photographs, the minor operations of handling, lifting, carrying and emptying refuse; the various methods of getting refuse into collection vehicles from curb or alley or householder's premises; and, finally, the organization of the work of collection crews. While no attempt is made to rate the various plans described, obvious advantages and disadvantages of efficiency and cost are pointed out.

In "Refuse Collection Equipment," the numerous factors to be considered in judging suitability of equipment are taken up: size, capacity, loading height and unloading devices, covers, speed and ease of movement, watertightness, safety, devices for convenience and comfort, appearance, and the adaptability of collection equipment for other work. The types of vehicles in use in different cities, and their various features, are described, with illustrations.

Street Rights-of-Way

Highway Condemnation.—By Richard W. Emory, Research Division, Maryland Legislative Council, City Hall, Baltimore, Md. 1940. *iv*+26 *pp.*

This subject is important because, since acquisition of private property for public use is essential to the construction of every public highway, delay in the procedure may cause delay in construction, with consequent loss of time and money. This report discusses Maryland's preliminary procedure in determining what land is to be acquired, condemnation procedure in the state, and procedure in the 47 other states. Possible means for improving Maryland's methods of condemnation for highways are briefly recommended.

Defense Highways

Vital Gaps in New York Metropolitan Arteries.—Triborough Bridge Authority, Randall's Island, New York. 1940. 9 *pp.*, 34 *pp. of maps and illustrations.*

Although present arterial highways around New York will meet normal demands, they could not absorb the added burden of mass military maneuvers and transportation of defense material by truck, nor could New York's huge population be evacuated by them. This report presents plans for highways to fill the four vital gaps in the present network: the Pelham-Portchester Express Highway, the Brooklyn-Queens Connecting Highway, the elevated highway across Lower Manhattan, and Harlem River Drive. Like other Robert Moses reports, this is a handsome publication, with elaborate maps, street diagrams and photographs, showing not only proposed locations, routes and designs, but present congested conditions.

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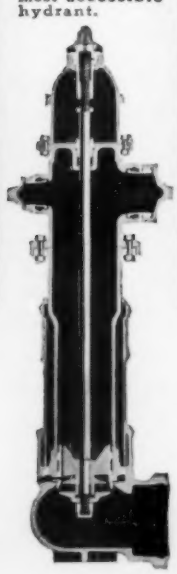

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Small-Town Life

Home Town.—By Sherwood Anderson; Photographs by Farm Security Photographers. The Face of America series, Edwin Rosskam, Editor. Alliance Book Corp., New York. 1940. 148 *pp.* $2.50 *from* THE AMERICAN CITY.

Roads are constructed, water towers built, taxes levied, sewer pipes laid, traffic signals put up, city officials elected—the city government is run, for the citizen, the man to whom the city belongs. And he can best be seen in his life span, in his relationship with his fellow men, in the small town—cross-section of American life. "The real test of democracy may come in the towns," says the author, and in his sharp, clean English and in a selection of revealing photographs you see in this book the small American town—the mining town, the flat middle-western town, the elm-shaded New England town, the cotton and tobacco southern town. You see the town's typical characters—the home-town editor, the storekeeper's daughter, the lawyer, minister, town bully, old maid school teacher, farmer's son, the woman who thinks she is always sick; at work, at play, worshipping, in the court, in the classroom and schoolroom; in the spring, summer, fall and winter.

Annual Report Content

A Checklist of Suggested Items for the Annual Municipal Report.—The International City Managers' Association, 1313 E. 60th St., Chicago, Ill. 1940. 18 *pp.* 50c.

This is a supplement to "Specifications for the Annual Municipal Report," published by the Association in 1939. It contains a revision of that part of the first report which listed the items of information on each municipal activity recommended to be included in a city's annual report. This list has been made more comprehensive and specific, in accordance with suggestions from municipal officials. All main municipal activities are included, from health to legal services and personnel.

Airport Law

The Legal Experience of Airports.—By Charles S. Rhyne, Attorney for the National Institute of Municipal Law Officers, 730 Jackson Place, Washington, D. C. Reprinted from the Journal of Air Law and Commerce, October, 1940. *Apply to the Institute.* 24 *pp.*

National defense has accentuated the growing importance of the airport. This article reviews and analyzes legal experience in connection with: the acquisition and leasing of privately and publicly owned airports; operation of airports—regulations as to use, damage claims for negligent injury, airport nuisance cases; protection of airport approaches—spite structures, methods of control of height of structures adjoining airports.

Defense Housing Data

Defense Housing Digest—A Summary of Laws, Regulations, and Results.—National Association of Housing Officials, 1313 E. 60th St., Chicago, Ill. 1940. 32 *pp.* $1.00.

The five major defense housing acts that have been passed by Congress to date are reproduced in full in this loose-leaf digest. Quick reading has been greatly facilitated by marginal headings and underlining of the high points of the text. The Association plans to publish additions that can be inserted into the digest: copies or summaries of administrative rulings; an outline of the duties and relationships of the Defense Housing Coordinator's office; résumés of funds allocated and used, etc.

Firemen

Hours of Work of Municipal Firemen in the United States.—Reprinted from the July, 1940, issue of the Monthly Labor Review, Bureau of Labor Statistics, U. S. Department of Labor, Washington, D. C. Apply to U. S. Conference of Mayors, 730 Jackson Pl., Washington, D. C. 1940. 14 *pp. Free.*

A comprehensive study of fireman's wages, hours, and working conditions in cities of 25,000 or over, is being conducted by the Division of Construction and Public Employment of the Bureau of Labor Statistics, in cooperation with the Work Projects Administration. This leaflet reports part of the study—hours of work in single-, various types of double-, and three-platoon systems.

Government Management

Public Management in the New Democracy.—Edited by Fritz Morstein Marx, Associate Professor of Political Science, Queens College, with the Assistance of Enno Hobbing and Laurence I. Radway of the Harvard Guardian, Harvard University. Harper & Brothers, New York. 1940. *x* + 266 *pp.* $3.00 *from* THE AMERICAN CITY.

Increased governmental tasks require increased attention to the means of defining and accomplishing them—the adaptation of administrative methods to the new responsibilities. This treatment of the subject has a broad scope. Not devoted solely to technical issues, it deals with the whole problem of harmonizing the activities of government with broad public objectives, from the point of view of administrators, employees and the public. Growing out of the Harvard Guardian Conference on the American Public Service called and organized by a body of undergraduates at Harvard University, the book is written by fifteen public officials, business and labor leaders, professors and other prominent figures in the field. The local phase of administration, the citizen and the service, advisory committees, administrative coordination, recruitment for the public service, and civil service unionism, are some of the phases covered.

Constitutionality of Housing

The Law of Public Housing.—By William Ebenstein, University of Wisconsin. The University of Wisconsin Press, Madison, Wis. 1940. *x* + 150 *pp.* $1.50 *from* THE AMERICAN CITY.

Housing, like other recent social developments, has extended the scope of American public law. This book not only analyzes legal opinion in the leading state and Federal cases involving public housing, but presents the sociological, economic and political background and implications of housing law. The opening chapter discusses briefly the housing problem in this country, another chapter reviews the history of the government's relation to housing, with a survey of governmental activities and institutions in the housing field. European housing experience is summarized in the final chapter.

Publications

Your Business of Government.—Public Administration Service, 1313 E. 60th St., Chicago, Ill. Fall, 1940. 28 *pp. Free.*

The Public Administration Service has added many timely publications to its new list of valuable handbills and manuals on all phases of public administration, which it issues every spring and fall. Publications are prepared by national authorities in their respective fields; or present principles, findings and recommendations developed by survey, reorganization, and installation projects conducted by the Service. Also listed in the catalog are the publications of the 17 organizations associated with the Public Administration Service, which cover the fields of public administration, city and state government, public welfare, public works, planning, civil service, finance and taxation, police, and housing.

City Law Departments

Municipal Law Department Organization and Administration, Part I.—By John A. McIlvire, Executive Director, and Charles S. Rhyne, Attorney, National Institute of Municipal Law Officers, 730 Jackson Place, Washington, D. C. 1940. 47 *pp.* $1.00.

The importance of the city attorney is growing with the increase in potential financial liabilities resulting from the extension of municipal services in recent years. This bulletin summarizes answers received from 200 municipal law departments in response to a questionnaire, on their finances, personnel, specialized divisions within departments, specialized investigation of accidents, the techniques employed to control the work of departments, the officials and departments having the right to legal opinions from city attorneys, publication of opinions of city attorneys. A chart appendix gives statistics for different cities on budgets, office expense, salaries, number of assistants, salary of assistants and length of term.

Economic Philosophy

The Economic Democracy.—By Horace J. Haase. Orlin Tremaine Co., New York. 1940. *xviii*+390 *pp.* $2.25 *from* THE AMERICAN CITY.

The author of this book holds that individuallism and "true socialism" are in reality identical; that the doctrines currently advocated as socialism are "statism." Mr. Haase believes that "true socialism" advocates the minimum of government, whereas "statism" advocates the maximum; and the former, or individualism, has never been tried. He expounds the philosophy that the minimum of government is ideal, and he describes the implements for carrying out this philosophy of freedom—which consists essentially of taxation of land values rather than of improvements on the land. The three main sections of the book deal systematically and at length with the application of the proposed principles to the economic, social, and political spheres.

Defense and Housing

Housing for Defense: The Factual Findings, by Miles L. Colean; The Program, by The Housing Committee. The Twentieth Century Fund, 330 W. 42d St., New York. 1940. *xx*+198 *pp.* $1.50.

Last spring the Committee on Housing of The Twentieth Century Fund began a long-range study of the whole question of housing, which was postponed for this analysis of the immediate housing needs created when the United States entered into its huge defense program. Six chapters present factual findings by a research committee, covering: housing during the last war; the present problem; housing and the location of defense activities; community problems; construction and finance of new housing; and the role of government. The seventh chapter of the book presents conclusions and recommendations for a public policy and program of action, by an impartial committee of housing experts. Extensive appendices give "Patterns for Local Housing Inquiries," and useful reference data on costs, number of non-farm families, dwelling units and vacancies, distribution of defense contracts, etc. (See p. 79.)

Preventing Urban Decay

Waverly—A Study in Neighborhood Conservation.—Federal Home Loan Bank Board, Washington, D. C. *x*+98 *pp.*

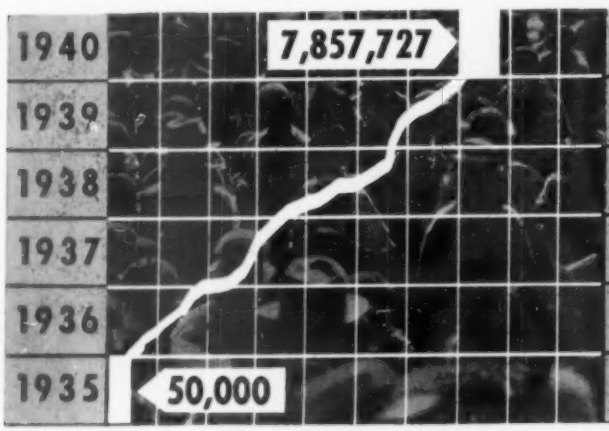
The prevention of neighborhood blight, forerunner of the slum, in the test community of Waverly, residential section of Baltimore, is the subject of this study by the Federal Home Loan Bank Board, in cooperation with the Baltimore and United States Housing Authorities, the WPA, and other local agencies. Waverly is not a depressed area, but is structurally, economically and socially sound, with only incipient blight. The method for preventing residential decay which is described here is applicable to many neighborhoods in which single-family, owner-occupied homes also predominate. The study analyzes the process and reasons for decay; examines the Waverly area—its social and economic status, structural status and condition; and outlines what has been and should be done to clear up and prevent blight—by rehabilitation, zoning, and street adjustment in accordance with the Master Plan, and through community cooperation and organization for that purpose.

Small City Merit Systems

Personnel Programs for Smaller Cities—As Exemplified by Installations in Various Cities in Michigan.—Public Administration Service, 1313 E. 60th St., Chicago, Ill. vi + 46 *pp.* 75c.

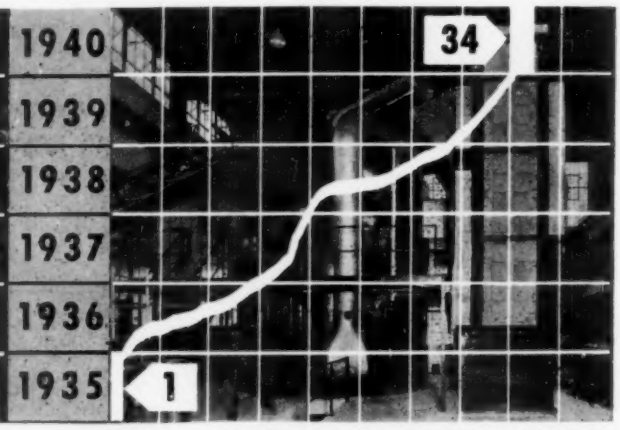
For demonstration purposes, the Civil Service Association of the United States and Canada, the Public Administration Service and the Michigan Municipal League have assisted four small Michigan cities in inaugurating a cooperative, modern merit system, which enables them to have the benefits, for a few days each month, of technical assistance in the field, which they could not afford on the full-time basis used by large cities. For other states and small cities desiring to install a similar system, the program is described in full, in relation to: organization; position-classification plan; pay plan; recruitment program; and in-service personnel program.

With NICHOLS HERRESHOFF INCINERATORS — SLUDGE BURNING LEAPS AHEAD!



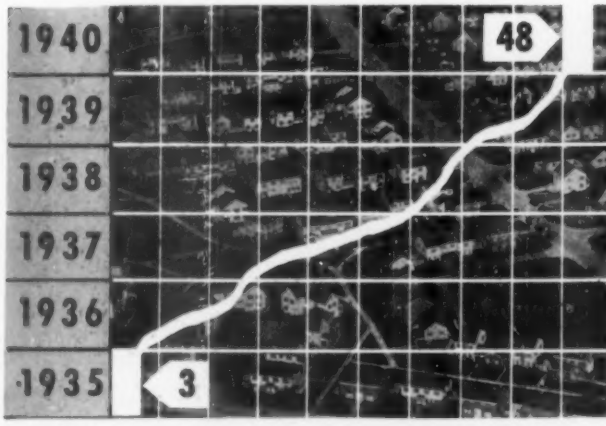
FACT 1 PEOPLE

Five years ago the first Nichols Herreshoff Incinerator for safeguarding public health was placed in operation in a town of approximately 50,000 population. Over 7,850,000 people now have their health safeguarded by the use of these incinerators.



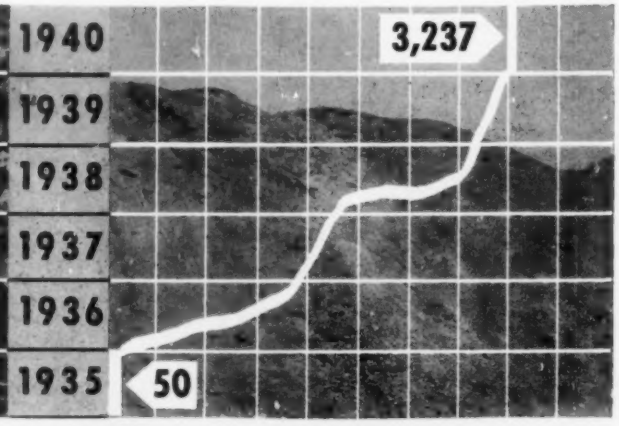
FACT 2 FURNACES

In 1935 one six-hearth Nichols Herreshoff Incinerator was placed in operation to burn municipal solid wastes. In 1940, thirty-four of these incinerators, ranging from four to twelve hearths each, are reducing sewage solids to clean mineral ash.



FACT 3 COMMUNITIES

Three communities protected their health by the first Nichols Herreshoff Incinerator installation. Forty-eight communities in 1940 — ranging in size from towns of approximately 2,000 population to cities of over 2,000,000 protect their health by the use of these incinerators.



FACT 4 TONNAGE

The first Nichols Herreshoff Incinerator provided for burning approximately fifty tons of sewage solids per day. So far in 1940 over 3,200 tons of municipal solid wastes are reduced daily to harmless mineral ash in Nichols Herreshoff Incinerators.

Bulletin No. 210-B, recently issued, illustrates and describes in detail the many advantages of Nichols Herreshoff Incinerators. Write for a copy.

NICHOLS

ENGINEERING & NERCO RESEARCH CORP.

60 WALL TOWER
NEW YORK, N. Y.

UNIVERSITY TOWER
MONTREAL, P. Q.

Service and Area Readjustment

Problems in Service Levels.—By William Seal Carpenter, Chairman, Department of Politics, Princeton University; with a bibliography by Lee Virginia Wingfield, Librarian of the Princeton Surveys. Princeton University Press, Princeton, N. J. 1940. viii + 254 pp. $2.50 from THE AMERICAN CITY.

The present local government unit has been found, in many cases, ill-fitted to meet increasing local financial problems. Various methods of readjustment that have been tried are discussed in this clear-cut treatment of the subject: interjurisdictional agreements; consolidation and annexation; and the relatively new method of deorganization or complete dissolution of the local government. Conclusions are drawn and methods of arriving at a balance of "self-government, effective service areas and tax-paying capacity" are presented. The valuable bibliography, the first of its kind to be compiled, describes briefly the content of the 667 entries it lists. The book is the second in the series, Cromwell Fund Studies in Government and Finance, sponsored by the State and Local Government section of the university.

Mayors' Conference

City Problems of 1940—The Annual Proceedings of the United States Conference of Mayors, New York City, Sept. 19-21, 1940.—Edited by Paul V. Betters, Executive Director, The United States Conference of Mayors, 730 Jackson Pl., Washington, D. C. iv + 115 pp. **$3.00.**

Most of the talks at the Conference of Mayors this year had to do with the various aspects of the city's role in national defense—housing, WPA programs and defense, the administration of the compulsory military training act, training defense workers, the airport program. Other subjects discussed were the Department of Justice and the cities, Federal-city relations, planning, home rule, and the Pan-American Congress of Municipalities.

Planning Conference Proceedings

National Conference on Planning, 1940—Proceedings of the Conference held at San Francisco, Calif., July 8-11.—American Society of Planning Officials, 1313 E. 60th St., Chicago, Ill. vi+194 pp.

The proceedings are a surprise this year in a new attractive rust-and-white cover. Inside are the usual high-caliber, stimulating articles by planning experts, on planning education, county planning, migration and resettlement, highways and transportation, regional industrial trends, central business districts, architectural control, the use of tax-abandoned land, planning and housing.

New York Fiscal Status

The Finances of the City of New York.—By Cushman McGee, Director of Municipal Research, R. W. Pressprich & Co., Members of the New York Stock Exchange, New York. 1940. xiv+286 pp.

This is a manual or guidebook to the multiple and diverse fiscal affairs of the city of New York. It was felt to have particular interest now that all privately owned rapid transit facilities have been taken over by the city, and a large amount of city obligations has been issued to pay for them. The book examines concisely the major phases of the municipality's activities as they affect its credit position. Part I gives a brief survey of transit unification and the high spots in the finances of the city; Part II gives a more detailed and broader discussion of the city's fiscal status.

Correction

No price was given for the 1940 Convention Proceedings of the American Road Builders' Association, in the review of that publication on p. 113 of the November issue of THE AMERICAN CITY. The cost is $10, and the volume may be obtained from the Association, National Press Building, Washington, D. C.

Other Reports Received

BERKELEY, CALIF.—Civic Affairs, Annual Report, year ended June 30, 1940. 52 pp.

CHICAGO, ILL.—Report of the Committee on Assessment Organization and Personnel. National Association of Assessing Officers, 1313 E. 60th St., 28 pp.

COLUMBUS, OHIO.—"Industrial Columbus." The Columbus Chamber of Commerce, 30 E. Broad St. 15 pp.

DETROIT, MICH.—Notes on a Conference for Measuring Juvenile Delinquency. Detroit Bureau of Governmental Research, Inc., 5135 Cass Ave. 12 pp.

—"Suggestions for the Reorganization of Assessing Practices in the City of Detroit." By J. M. Leonard. Detroit Bureau of Governmental Research.

FORT WORTH, TEXAS.—Zoning Ordinance. 72 pp.

HAWAII.—"Lands for Our Public Schools—An Integral Part of the Territorial Master Plan." Territorial Planning Board, Honolulu, Hawaii. 90 pp.

KANSAS.—Personal Property Taxation in Kansas—Part I, Policy and Administration. Research Department, Kansas Legislative Council, Topeka. 27 pp.

MARYLAND.—Supplementary Report on Regulation of Fireworks. Research Division, Maryland Legislative Council, City Hall, Baltimore.

MICHIGAN.—"Liquor Control or Chaos." Michigan Liquor Study, Inc., 6432 Cass Ave., Detroit. 85 pp.

MILWAUKEE, WIS.—Annual Report, 1939. 134 pp.

MONTCLAIR, N. J.—"Montclair's Capital Needs Inventoried for 1940-49, A Ten-Year Survey to Guide Expenditures for Improvement While Continuing to Reduce Town Debt." 30 pp.

OAKLAND, CALIF.—Auditor's Annual Report, year ended June 30, 1940. 36 pp.

Conventions—When and Where

January 14, 1941.—Cheyenne, Wyo.
LEAGUE OF WYOMING MUNICIPALITIES. (Plains Hotel.) Exec. Sec., G. R. McConnell, Laramie, Wyoming.

***January 13-18.—New York City.**
AMERICAN SOCIETY OF CIVIL ENGINEERS. (Engineering Societies Bldg. and Waldorf-Astoria Hotel.) Sec., George T. Seabury, 33 W. 39th St., New York.

***January 15-17.—Toledo, Ohio.**
NATIONAL PAVING BRICK ASSOCIATION. (Commodore Perry Hotel.) Chief Engr. and Sec., William H. Cullimore, National Press Bldg., Washington, D. C.

***January 20-24.—West Lafayette, Ind.**
PURDUE ROAD SCHOOL. (Purdue Univ.) Address: Ben H. Petty, Engineering Extension Dept., Purdue Univ., W. Lafayette, Ind.

January 24-26.—New York City.
NATIONAL HOUSING CONFERENCE. Sec., Miss Helen Alfred, 122 E. 22d St., New York.

January 27-30.—New York City.
AMERICAN ROAD BUILDERS' ASSOCIATION. (Pennsylvania Hotel.) Engr.-Dir., Charles M. Upham, 952 Nat'l Press Bldg., Washington.

***February 17-20.—Houston, Texas.**
ASSOCIATED GENERAL CONTRACTORS OF AMERICA, INC. M'ng Dir., H. E. Foreman, 222 Munsey Bldg., Washington, D. C.

***February 18-20.—Washington, D. C.**
AMERICAN CONCRETE INSTITUTE. (Mayflower Hotel.) Sec., Harvey Whipple, 7400 Second Blvd., Detroit, Mich.

***February 18-21.—Wichita, Kans.**
SOUTHWEST ROAD SHOW AND SCHOOL. (Exposition Bldg.) Mgr., F. G. Wieland, 225 S. Water St., Wichita, Kans.

***March 20-21.—Syracuse, N. Y.**
AMERICAN WATER WORKS ASSOCIATION—NEW YORK SECTION. Sec., R. K. Blanchard, 50 W. 50th St., New York.

***March 20-21.—Trenton, N. J.**
NEW JERSEY SEWAGE WORKS ASSOCIATION. (Stacy-Trent Hotel.) Sec., John R. Downes, Bound Brook, N. J.

***April 16-19.—Cincinnati, Ohio.**
NATIONAL ASSOCIATION OF HOUSING OFFICIALS. (Netherland Plaza Hotel.) Sec., Coleman Woodbury, 1313 E. 60th St., Chicago, Ill.

***April 23-25.—Excelsior Springs, Mo.**
MISSOURI ASSOCIATION OF PUBLIC UTILITIES. (Elms Hotel.) Asst. Sec., Jesse Blythe, 101 W. High St., Jefferson City, Mo.

***April 28-May 1.—Washington, D. C.**
CHAMBER OF COMMERCE OF THE UNITED STATES. Sec., Ralph Bradford, 1615 H St., N. W., Washington, D. C.

***May 8-10.—Seattle, Wash.**
AMERICAN WATER WORKS ASSOCIATION—PACIFIC NORTHWEST SECTION. Sec., Fred Merryfield, Oregon State College, Corvallis, Ore.

***May 13-16.—Cincinnati, Ohio.**
AMERICAN WATER WORKS ASSOCIATION—OHIO SECTION. Sec., T. R. Lathrop, State Dept. of Health, Columbus, Ohio.

***May 30—June 1.—Atlantic City, N. J.**
COMMUNITY CHESTS AND COUNCILS, INC. Exec. Vice-Pres., Allen T. Burns, 155 E. 44th St., New York.

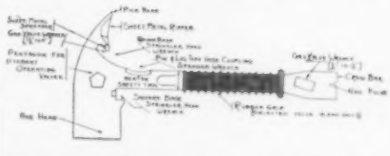
***June 3-6.—Atlanta, Ga.**
SMOKE PREVENTION ASSOCIATION. (Ansley Hotel.) Sec., Frank A. Chambers, City Hall Square Bldg., Chicago, Ill.

June 22-26.—Toronto, Ont.
AMERICAN WATER WORKS ASSOCIATION. (Royal York Hotel.) Sec., Harry E. Jordan, 22 E. 40th St., New York.

***October 13-16.—Fort Worth, Texas.**
AMERICAN WATER WORKS ASSOCIATION—SOUTHWEST SECTION. Sec., Lewis A. Quigley, 3320 W. Berry St., Fort Worth, Texas.

* First appearance of notice on this page.

The BENTON SAFETY TOOL



We offer this combination Safety Tool to fire and police departments, municipal airports, water works and sewerage plants, hospitals, light and power plants, etc.

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NOW—EVERY GOOD DRIVER IN YOUR FLEET CAN GET

25 TO 30 MILES ON A GALLON—

NASH'S NEW LOWEST-PRICE CAR

- ★ 25 to 30 Miles per Gallon of Gasoline!
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- ★ More Seating Width than any lowest-price car!
- ★ Coil Spring Ride on All Four Wheels!
- ★ New "Unitized" Steel Body—Safer, Quieter!
- ★ Improved Weather Eye Conditioned Air System . . . and Convertible Bed!

$70 to $100 Saved—every 20,000 miles! Nash's new, lighter body, more economical engine get more mileage out of gas, oil, tires—lowers overall costs.

Weather Eye Conditioned Air keeps drivers warm—prevents winter accidents, too. Weather Eye pours in *fresh*, outside air. No hot, drowsy unhealthy "heater" fumes.

All Day Driving Made Easy! New Two-way Roller Steering takes far less effort; easier to park. New *four-wheel* coil springs give you a "heavy car" ride.

To prove how great this new car is . . . Nash offers every large fleet operator 1 car to drive for 30 days without obligation!

FLEET operators will agree that when Nash builds a car—it's *right.*

Just imagine this fleet car . . . big, fast, powered to deliver not the usual 15 to 20 miles a gallon—but *25 to 30* in the hands of your average good driver.

It's a completely new kind of car.

It's safer, stronger, roomier! Built not with the usual bolted frame that needs tightening every 10,000 miles, but a "unitized" construction—the frame and body are combined and welded into one solid unit.

Smoother riding, too! Nash is the only car in the lowest-price field with soft coil springs *on all four wheels.* It rests the driver while he rides; keeps the car in better shape.

Performance is better—in all kinds of weather. That new Nash Flying Scot Engine is *Manifold-Sealed* so that drivers won't waste time "warming up" in winter.

Even driving is easier with new *Two-way* Roller Steering . . . quieter with Sand Mortex Soundproofing.

In winter—Nash's new Automatic Weather Eye Conditioned Air System will keep salesmen on their routes even in weather cold as 10° below. Cuts down "sick" hours.

From start to finish, it's "made-to-order" for fleet service.

The economy figures you have read about it are true—proved by hundreds of thousands of miles of test driving—and we invite you to check them yourself—with your own drivers, on your own routes.

See your nearest Nash dealer—or wire W. A. Blees, Nash Motors Division, Nash-Kelvinator Corporation, Detroit, Michigan.

Go NASH AND SAVE MONEY EVERY MILE

Business Coupe illustrated, delivered at the factory, including all standard equipment and Federal taxes . . . **$731**

Weather Eye, Fourth Speed Forward, Convertible Bed; optional equipment at slight extra cost.

News and Illustrations

Items of Interest to City, Town and County Officials, and Others Concerned with the Economical Construction and Efficient Operation of Public Improvement Undertakings

Dickerson Chairman of I.E.S. Street Committee

A. F. Dickerson, Manager of the General Electric Lighting Division at Schenectady, N. Y., has been named Chairman of the Street and Highway Lighting Committee of the Illuminating Engineering Society. He has served that organization as a Director and is a member of various committees. Mr. Dickerson is also Chairman of the Street and Highway Safety Bureau of the National Electrical Manufacturing Association.

A. F. Dickerson

He succeeds F. V. Westermaier, Consulting Engineer of the Welsbach Street Lighting Co., of Philadelphia, Pa., as Chairman of the I. E. S. committee, which is composed of lighting engineers from all parts of the United States. The main purpose of the committee is to establish the scientific principles underlying street and highway lighting and to promote the application of such principles in practice.

New Consulting Firm in New Orleans, La.

Charles C. Barnard, David W. Godat and G. A. Heft have recently joined to form the consulting firm of Barnard, Godat and Heft at the Terminal Station Building, New Orleans, La. Their training and background enables them to thoroughly cover the general field of civil engineering practice with particular reference to structures, drainage, municipal public works and public utilities.

Mr. Godat is well known for his recent work as Bridge Engineer and then Maintenance Engineer for the Division of Public Works of the city of New Orleans, preceding which he was Designing Engineer for the Bureau of Bridges, Illinois Division of Highways, and Construction Engineer for the same organization. Mr. Barnard has had wide experience in railroad work with the Illinois Terminal Co., the Wabash and the Frisco railways. Recently he has been in charge of the Union Station Project for the city of New Orleans, making complete terminal studies for all railroads entering the city, including design of realignment of tracks, yards, terminal buildings and grade separations. Mr. Heft has also been associated with the Union Station Project in New Orleans as Engineer of Design.

Illustrated Bulletin on Snow Loaders

A new well-illustrated 12-page bulletin, on self-feeding snow loaders with tooth-edged digging flights, has been released by the George Haiss Mfg. Co., Inc., 141st Street and Park Avenue, New York. The bulletin shows the Haiss snow loader, which has a capacity of 10 yards per minute, and is built either with creeper treads or with wheel mounting. Mobility in a snow loader is a factor which must be considered in relation to the desirability of non-slip digging traction. Haiss Model 76C, on its creeper tread mounting, is 1,300 pounds heavier than its wheel-mounted counterpart and therefore has a greater traction grip. Steering is by means of brake bands on the differential countershaft.

Model 75W is the same machine lifted from its creepers and put on a fully engineered pneumatic-tire mounting designed for the load. The wheel and axle parts, steering gear and heavy-duty tires have all been specified after standard motor practice, and their application to the snow loader has been designed in collaboration with the suppliers including Timken, Budd, Thompson Products and Goodyear.

The new Bulletin 1040 gives operating speeds for road travel and for reverse when crowding into the pile, and other details useful to street-cleaning officials.

Center Striping for the Pennsylvania Turnpike

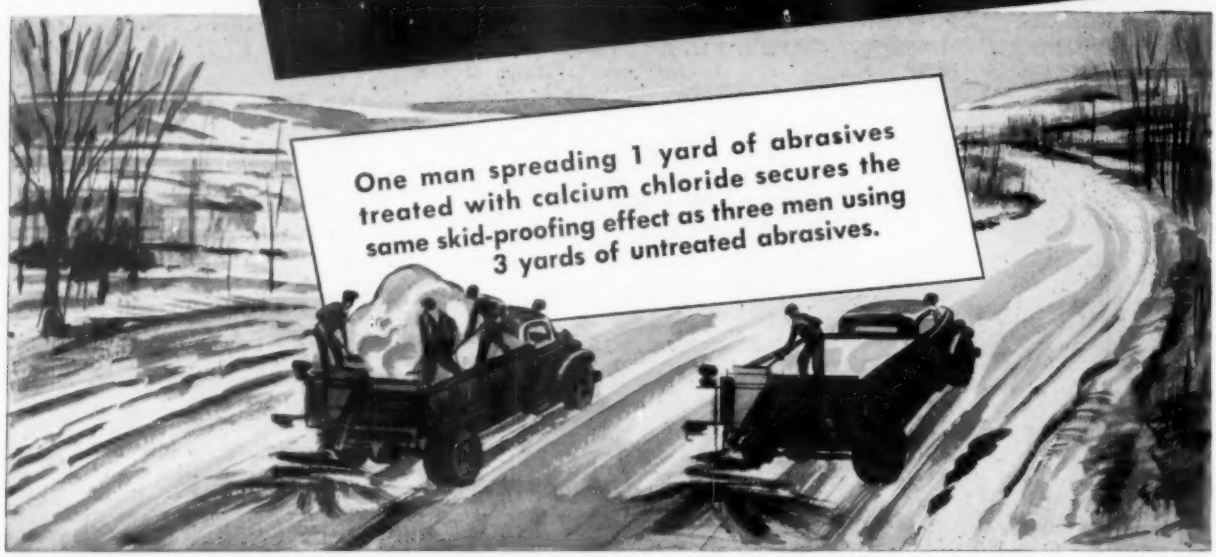
The Pennsylvania Turnpike, the new 160-mile super-highway across the state of Pennsylvania from east to west, has been made safe for night driving, not by continued illumination by overhead lights, but through the use of luminous center stripes and reflector button assemblies on the outsides of the road and in the center between the two roadways. Prismo Safety Corporation, Huntingdon, Pa., received the contract for installing Prismo Life-Line stripe, the entire length of the Turnpike just to the left of the construction joint on the high-speed lane, all 6 inches wide and in intermittent single lines. In the tunnels there are solid 6-inch single lines between white enamel mushrooms. The actual footage of striping is 900,000 feet of 6-inch line. The stripes were laid down by three Prismo stripers, requiring 1 gallon of the adhesive paint for 200 feet of stripe, and 6 pounds of the microscopic glass spheres per gallon of paint. A total of 4,500 gallons of Prismo white Life-Line paint was required and an estimated 171,460,800 No. 3 Prismo road spheres. This job was completed in 20 striping days.

For the first time, complete air-operated units were used for Prismo application. Air cylinders regulated the spray gun and dispenser, coordinating them in automatic "on and offs" to lay the intermittent stripes. This eliminated measuring and layout work prior to striping, and eliminated sphere wastage on intermittent striping.

Day and night photographs on the new 160-mile Pennsylvania Turnpike, showing the appearance of the Prismo 6-inch dividing stripes between lanes for traffic in the same direction. The center stripes in the seven tunnels are also Prismo Life-Line stripes, which are reported to be visible for 1,000 to 1,500 feet

More proof that abrasives treated with Calcium Chloride

Go Farther-Work Faster-Cost Less


One man spreading 1 yard of abrasives treated with calcium chloride secures the same skid-proofing effect as three men using 3 yards of untreated abrasives.

Actual tests of unquestioned authority by state highway departments and engineering experiment stations show:

1. Skid resistance of ½ lb. of calcium chloride treated abrasives is greater than 1½ lbs. of the same abrasives untreated. Thus, you can save 2/3 of your abrasives and at least $6.60 per mile of 18-foot road by treating your abrasives with calcium chloride (at the conservative abrasive cost of $1.50 per ton applied).

2. One cubic yard of treated abrasives will go three times as far—saves loading 2 out of 3 trucks when in a hurry.

3. Abrasives treated with calcium chloride bite right into the ice and give traction, while untreated abrasives are brushed away by tires and blown off by high winds.

4. Calcium chloride treatment prevents freezing of stockpiles, which are thus ready for easy loading and uniform spreading, impossible with frozen lumps.

This Standard Calcium Chloride Treatment Saves Money—Speeds Work—Promotes Safety

Stockpile treatment with flake calcium chloride (at a rate of 50 to 75 lbs. per cubic yard of abrasives) is standard practice in practically all states faced with the problem of skid-proofing icy pavements.

ICE CONTROL SUGGESTIONS FREE

Write for recommended practices and for data on field tests made by states, cities and experiment stations—but more important get calcium chloride into all your stockpiles now. Save 2/3 of your grits—save 2/3 of your loading—save picking away at frozen piles—save frostbitten fingers. Get speed into your safety work when ice starts to form, before wrecks occur, by treating all abrasives with calcium chloride.

CALCIUM CHLORIDE ASSOCIATION
4145 PENOBSCOT BUILDING • DETROIT, MICH.

The New Garbage Collection Truck Used by the City of Coronado, Calif.

Refuse Collection in Coronado, Calif.

Recently the city of Coronado, Calif., took over the collection of rubbish as a municipal utility, and has placed in service a new Model EG Mack truck with a 12-cubic-yard Gar Wood Loadpacker refuse body. This body compresses all types of garbage, refuse and rubbish, including cartons, boxes, tree trimmings and miscellaneous trash, into a compact, full-capacity load.

A large loading hopper, located close to the ground, makes it easy to load this truck by shovel or from baskets or cans. A tailgate ram compresses the material and it is possible to operate the ram while the truck is moving, thereby speeding up collections. The loading hopper is all enclosed so that odors are confined and papers cannot blow away, and it is watertight. The dumping is done in a conventional manner by opening the rear tailgate and raising the body with a hydraulic hoist.

Large-Capacity Pumps for Low Head Service

The new Angleflow pumps announced by Fairbanks, Morse & Co., Chicago, Ill., combine the advantage of the radial flow Francis runner type of centrifugal pump and the axial flow diffuser type of propeller pump with a design which is technically about halfway between. The hydraulic stream flow through the impeller is at an angle to the axis of rotation, the center of the pump shaft. The stream leaves the impeller and enters a volute, where the velocity imparted to the stream by the impeller is recovered in the form of pressure head, and in the same manner as any other volute or centrifugal type pump. Since a volute is used for the velocity recovery no diffusers such as are employed in propeller pumps are necessary. This makes the unit suitable for many applications where there is some flexible trash such as dirt, silt, sticks or stones or other foreign matter in the water being handled. It also eliminates the shearing effect which is always present between the back side of the rotating propeller blade and the front side of the stationary diffuser blade in the propeller type of pump.

Both vertical shaft and horizontal shaft types of Angleflow pumps are provided in standard sizes up to 54-inch discharge and in special larger sizes, depending upon the job requirement. The design and construction of these units have followed the high-grade type of pumping machinery, with two sets of double and replaceable wearing rings on an advanced type of enclosed impeller, very large and adequate shaft and bearings, streamlined water passages that are derived from extensive research and field experience. This type of pump is suitable for large-capacity installations in the lower head where low power and upkeep cost is more important than mere pump plant cost. A new 16-page Bulletin, No. 5710, illustrates and describes this new line of Angleflow pumps for large-capacity pumping operations, such as land drainage, flood control, irrigation, storm-water disposal, municipal pumping, excavation unwatering, cofferdams, dry docks, and other services.

Catalog Describes a New Diesel Tractor

Allis-Chalmers Mfg. Co., Milwaukee, Wis., has just released a catalog on the new Allis-Chalmers HD7 diesel crawler tractor. This catalog is quite different in its approach to its subject, as it is written in a conversational tone much like a letter and the whole catalog is in typewriter type. It contains twenty-four pages, is printed in two colors and emphasizes the five main features of this new 54-hp tractor. These features are: (1) two-cycle diesel power; (2) balanced power and speed; (3) bi-metallic clutches and brakes; (4) new track release mechanism; (5) positive-seal truck wheels.

Copies of this catalog will be furnished to our readers free on request by mentioning this item.

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AND PLAIN
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Traffic
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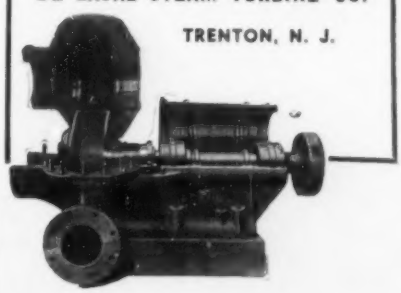
958 Wall St. Toledo, Ohio

DE LAVAL
CLOGLESS PUMPS
1—Can be disassembled without disturbing piping.
2—The impeller has wide passages without sharp corners, but provides guidance for the water to obtain high efficiency.
3—Wearing rings protect both impeller and casing to reduce leakage. Can be sealed with clear water.
4—To reduce overhang of impeller, stuffing box is over hub of impeller, which is protected by a renewable sleeve. Can be clear water sealed.
5—Heavy shaft carried in ball bearings spaced well apart.
Ask for paper P-3302 *on SEWAGE PUMPS, by A. Peterson.*
DE LAVAL STEAM TURBINE CO.
TRENTON, N. J.



READY FOR YOUR TOUGHEST JOBS RIGHT FROM THE START!

THERE'S a reason why the Ford Motor Company has built *and sold* more trucks than any other manufacturer. It's because Ford units give a full measure of service right from the start.

For example, you get *full value* from your new Ford Truck the very moment you put it to work on your job. Its precision-built engine does *not* have to be "broken in"! By the time the first 100 miles have clicked across the speedometer, you can drive your unit as fast as the law and road and traffic conditions permit. No "coddling" here. Your new Ford Truck pays dividends from the day you take delivery.

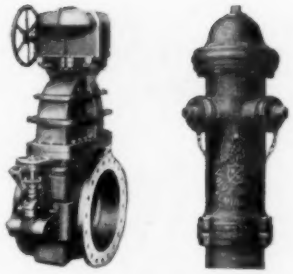
Because of rugged construction, top performance and high dependability, you can count on Ford operating economy.

Put a Ford Truck to work for you in 1941! Ask your dealer for a *free* "on-the-job" test that will prove what a Ford unit can do for you under *your own* operating conditions.

FORD TRUCKS and Commercial Cars

FORD MOTOR COMPANY, BUILDERS OF FORD V-8 AND MERCURY CARS
FORD TRUCKS, COMMERCIAL CARS, STATION WAGONS AND TRANSIT BUSES

Ford



Typical Kennedy Valve and Hydrant

Comprehensive Catalog on Valves and Hydrants

A 240-page letter-size cloth-bound catalog on valves, pipe fittings and fire hydrants just published by the Kennedy Valve Mfg. Co., Elmira, N. Y., presents in a very complete manner data on bronze and iron-body valves for low, standard and higher pressures, standard bronze and malleable-iron screwed fittings, standard cast-iron flanges, fittings and flanges, fire hydrants and various valve specialties.

A section of the catalog is devoted to descriptions of valve accessories for various operating conditions, suggestions for the operation, care and maintenance of valves, and numerous pages of useful engineering data. Five indexes and tabulations of references greatly aid the user of the catalog in quickly finding the information desired. The catalog is characterized by large illustrations throughout, and in the section on iron-body valves the dimensions and prices of valves and accessories are all on facing pages for convenience.

Copies of this catalog may be obtained by writing the Kennedy Valve Mfg. Co., 1189 East Water Street, Elmira, N. Y., on official stationery, and asking for Catalog 63.

New Catalog Out on Pipe Repairs

A new and larger catalog on pipe repairs, service fittings, drilling methods and equipment, Skinner Catalog No. 41, has just been released by M. B. Skinner Co., South Bend, Ind. The catalog amounts to a 40-page manual on this type of equipment. It is larger in size than the usual form, is well illustrated and contains a great deal of information including complete dimensions, installation instructions and much original data.

It has a plastic binding, so that it can lie flat on a desk, and describes a number of items not previously included in Skinner catalogs, including a non-shift service saddle, a bull-neck street tee, a forged welding tee, a welding tube and various drilling devices, cutters and adapters. A series of tables show the ten most widely used service methods, with data on equipment recommended for various sizes of tees, saddle outlets, pipe nipples and tubes.

Copies of this catalog may be secured by writing to M. B. Skinner Co., South Bend, Ind., on your official stationery.

New Sales Office for Columbia Alkali Corp.

W. I. Galliher, Director of Sales of the Columbia Alkali Corporation, a Division of Pittsburgh Plate Glass Co., has announced the establishment of another chemical sales office in the Southeast, in charge of J. R. Simpson of Durham, N. C. After February 1, 1941, the office will be located at Charlotte, N. C.

New Representatives for Yeomans Brothers

Yeomans Brothers Co., Chicago, Ill. manufacturers of pumping machinery, rotary air compressors, dry vacuum pumps, pneumatic sewage ejectors and sewage-treatment equipment, has announced the appointment of Gustavo Preston Co., 113 Broad Street, Boston, Mass., as its New England representative. This sales group originated in 1881, and is staffed today to render engineering service as well as daily pump service.

The Use of Aluminum in the Sanitary Field

The high resistance of aluminum to the corrosive action of the atmosphere and a great variety of chemical compounds is important to sanitary engineers. Aluminum is easily oxidized so that its surface is always enveloped in a tightly adherent coat of oxide. It is this film which is highly resistant to many chemical compounds, gases and complex solutions. A few chemicals such as strong alkalis dissolve aluminum oxide, as well as the metal itself, and thus continue chemical action until the metal is destroyed. On the other hand, hydrogen sulfide, which is so often present in sewage treatment and is especially destructive to many common structural materials, is practically without effect upon aluminum and will not corrode the metal even at high temperatures.

A paper on the use of aluminum in the sanitary field has been prepared by R. C. Wilson, of the Aluminum Co. of America, and copies of it may be secured by those interested. It covers a large number of gases, and solutions which are present in sanitary work, and describes the many applications of aluminum alloys for use in sewage-plant operating equipment as well as for architectural applications including window and door frames, floor gratings, tread plates, conduits, lighting fixtures, hand railings, skylights, ventilation ducts and many other metal items. A long series of experiments were conducted at many sewage-treatment plants by exposing several aluminum alloys at various positions in the plants, from 1931 through 1935, and again another series from 1935 to late in 1939. The results of these experiments are discussed in the paper. Specifications for sand cast diffuser plate holders for the activated sludge process, and drawings for gratings and other aluminum or aluminum alloy products, will be furnished to those who state their needs.

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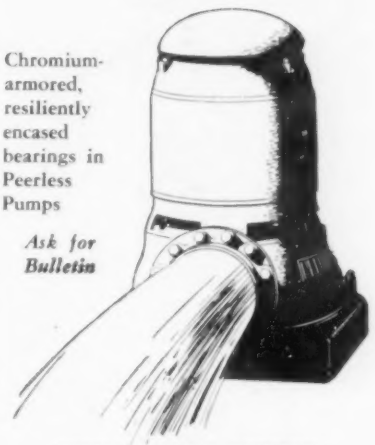

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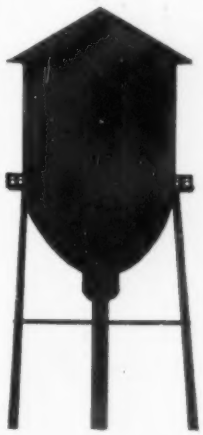

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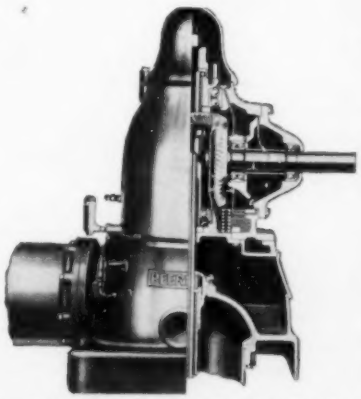
Do you mention THE AMERICAN CITY? Please do.

The Department of Water Supply of Detroit, Mich., uses this 10-ton Industrial Brownhoist crane for loading and unloading water pipe, fittings and other heavy materials as well as for lowering pipe into place in trenches. Here it is loading a tee onto one of the new 1941 Ford cab-over-engine trucks

Improved Pump Head for Deep-Well Units

Improvements in the design of geared heads for deep-well turbine pumps which are embodied in the 1941 models have been announced by the Peerless Pump Co., 301 West Avenue 26, Los Angeles, Calif. The take-off shaft is designed to carry increased loads, and double-row ball bearings support the horizontal and vertical shafts and are placed adjacent to the spiral bevel gears.

An extra-heavy thrust bearing supports the lower end of the geared shaft sleeve, and an additional thrust bearing supports the outer end of the horizontal drive shaft. All four bearings are lubricated by an oil pressure system which circulates cooled oil to both bearings and gears. To prevent leakage of oil from the outer bearing on the take-off shaft, an oil seal is placed on the end of the bearing housing. This seal is equipped with an annular garter spring, and the treated leather element is oil-resistant.



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Annealed semi-steel castings are employed to insure against distortion and misalignment of gears and other moving parts. The head assembly is streamlined and the gearing is completely housed for protection against the elements. The gears are heat-treated, hardened and ground nickel alloy and lapped for specific operating tooth capacities. The standardized speed ratios are 1 to 1, 1-1/3 to 1, 1½ to 1 and 2 to 1. The head, known as the Gearturbo, provides for connection through a universal shaft to gas engines, steam engines and other power units.

A New Diesel Grader for Bank-to-Bank Work

A new motor grader with the engine located directly over the drive has been announced by J. D. Adams Co., Indianapolis, Ind. This No. 311 grader is powered by an International 50-hp diesel engine and is built around an all-welded box-type main frame. The manufacturer claims that this medium-size machine is capable of building and maintaining roads from bank to bank including back sloping.

Among the operating advantages claimed for the machine is that with the same setting of the lift linkage and with the blade in center position, the blade can be adjusted from deep ditching position to high bank cutting position in about 40 seconds, permitting all adjustments on 90 per cent of the work to be made without the operator's leaving the cab. The blade can be set vertically if desired and has a very wide shoulder reach as well as a good flat-bottom ditching position. The circle is full revolving, and the blade can be set to ditch or move dirt with the machine operating in reverse gear. The blade can be reversed with the scarifier on the machine by simply lifting the scarifier teeth out.

The New 50-hp Adams Diesel No. 311 Motor Grader

This No. 311 grader has eight forward speeds, with high speeds for traveling, and two reverse speeds. The balanced weight distribution is such that surface maintenance can be handled at 6 to 7 mph without objectionable bouncing or vibration. Prices and literature describing this new machine can be had on request by addressing J. D. Adams Co., Indianapolis Ind., and mentioning this item.

"Public Economy No. 1"

For public works and city improvement departments, there are large savings to be made by providing all hand-loading crews with the Brooks LOAD LUGGER System. It is the most modern dump truck equipment with detachable bodies, and it meets all requirements for easy control and hard service. Unequalled in speed and simplicity. High discharge but low headroom . . . powerful, double hoist . . . welded steel frame . . . one-piece, water-tight buckets . . . mountable on any standard truck chassis. *Write for Bulletin.*

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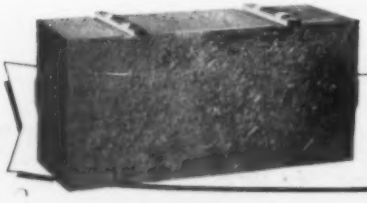

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Mark Egan

Mark Egan Joins Alber & Zwick, Inc.

Mark Egan has resigned his post as Executive Vice-President of the Cleveland Convention & Visitors' Bureau to devote his time to the general field of public relations, especially with reference to the staging of conventions. Mr. Egan has associated himself with the public relations, publicity and lecture bureau firm of Alber & Zwick, Inc., with offices in the N.B.C. Building, Cleveland, Ohio. He becomes Vice-President of this firm.

Mr. Egan has managed convention bureaus in Cleveland, Cincinnati and Pittsburgh, and has been Sales Manager for leading hotels in Chicago and Pittsburgh. In addition to his work with Alber & Zwick, Inc., he is the owner and proprietor of the King Edward Hotel, Niagara Falls, Ont.

Mr. Egan now plans to make it his profession to help cities throughout the United States and Canada to secure larger and better conventions, manage them properly and instruct those in charge of the convention bureaus how to finance them adequately as well as how to secure the proper local support. In three-day convention clinics, Mr. Egan plans to cover analysis of the city studied in terms of its potentialities as a convention center; how to establish a budget with special emphasis on the ways and means of raising it; plans for the development of local enthusiasm for the activities of the convention bureau; the procedure for securing proper support and publicity from newspapers, radio and civic organizations; how to build a convention bureau organization which will function continuously; how to build effective convention files, which are the nerve center of any successful convention bureau; how to develop a continuous stream of campaign material calculated to secure conventions, showing samples of such material; and, finally, the working-out of a practical program for servicing the conventions booked to develop good-will and secure return dates.

Clark Joins Pomona as a Sales Engineer

The Pomona Pump Co., Pomona, Calif., has announced that Arthur T. Clark, formerly Development and Sales Engineer in the Pipe Coatings Division of The Barrett Co., New York, and more recently employed on engineering development work by the American Water Works and Electric Co., has joined the New York office of the Pomona Pump Co. as Sales Engineer. His long and varied experience in the water-works field took him from the managership of the Greenwich Water Co., Greenwich, Conn., to the head office of the Community Water Service Co., as its Chief Engineer.

Mr. Clark has also handled special assignments for the National Water Main Cleaning Co., has been Manager of the Morristown, N. J., Water Department, and then aided in the development of coal tar enamels with The Barrett Co. for coating and lining pipes.

Pomona Pump Co., with plants in Pomona, Calif., and St. Louis, Mo., has, during the past year, established an executive eastern office at 120 Broadway, New York, made General Sales Manager C. L. Barrett, Vice-President in Charge of Sales, and W. D. Turnbull, General Sales Manager. To the New York office the company also transferred Svend A. Canariis, formerly in charge of pumping stations at the Pittsburgh, Pa., Water Department.

Brick Paving Meeting to Be in Toledo, Ohio

The Thirty-Fifth Annual Meeting of the National Paving Brick Association is to be held on January 15-17, 1941, at the Commodore Perry Hotel in Toledo, Ohio. In addition to the business meetings of the manufacturers, many of the sessions will be open to the general public when important recent developments in manufacturing, and experience in research and testing and in methods of construction, will be discussed.

C. C. Blair, head of the Metropolitan Paving Brick Co., Canton, Ohio, is President and William H. Cullimore is Chief Engineer and Secretary of the National Paving Brick Association.

New Asphalt Manager for Shell Oil Company

The appointment of David Waxman as Manager of the Asphalt Department of the Shell Oil Co., 50 West 50th Street, New York, has been announced as part of a current move to consolidate Shell's entire organization. The merger of Shell's eastern and mid-western marketing and producing units is practically completed.

Mr. Waxman is a graduate civil engineer and has had experience in the State Highway Department of Pennsylvania, the Construction Division of the United States Army, and with the Pittsburgh Testing Laboratories. During 1925, he was engineer and superintendent for Sam E. Finley, Atlanta, Ga., in charge of asphalt road construction. He started with Shell, in New Orleans, in 1926, working his way up to Manager of the St. Louis, Mo., office in 1929.

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H. P. JONES & CO.
Engineers
Reports, Designs, Supervision, Investigations, Appraisals, Water Supply, Water Purification, Sewerage, Sewage Treatment, Refuse Disposal
2012 Second Nat'l Bank Bldg., Toledo, O.

PITTSBURGH TESTING LABORATORY
INSPECTING ENGINEERS AND CHEMISTS
PITTSBURGH, PA.
Branch Offices in Principal Cities

The American City

Obsolete Equipment Should be Junked

The junk pile should be the quick and final resting-place for obsolete municipal equipment. It is altogether too costly to be used.

The taxpayer pays for the obsolete machine in municipal service that tries to do a modern day's work, but can't.

The taxpayer pays, in enormous sums of public money which are wasted by the wholly unnecessary cost of inefficiency. Because he cannot see these losses, the taxpayer imagines they do not exist.

The companies listed below, whose advertising you will find in this issue of THE AMERICAN CITY, will be glad to cooperate with you in modernizing methods, materials and machinery.

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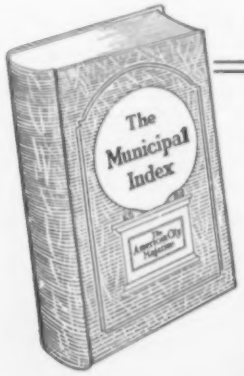

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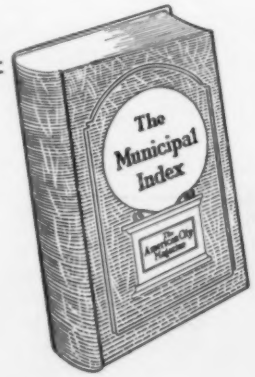


"BEST PIECE OF EQUIPMENT THIS CITY EVER BOUGHT"

• *Fort Smith's "Caterpillar" Diesel No. 212 Motor Grader cuts some new alleys.*

PUT a "Caterpillar" Diesel Motor Grader on your streets, and there's every chance in the world you'll say exactly what C. P. Sparks, Supervisor of Shops, Fort Smith, Arkansas, says: "Best piece of equipment this city ever bought." And you'll also say something like Mike O'Shea, Fort Smith's Street Commissioner.

Mr. O'Shea writes: "Our 'Caterpillar' Diesel No. 212 Motor Grader has been working 8 hours a day doing maintenance-work on the streets since its delivery. We are very much pleased with the results obtained thus far. This machine is operating very economically, we think—using less than one gallon of 6c fuel an hour."

A fast worker. A hard worker. An all-around worker. An economical worker. A "street department" in itself. *That's* the "Caterpillar" Diesel Motor Grader! It can build new streets from start to finish. Mix and spread oil-mat. Maintain shoulders along a hard surface. Scarify. Reshape gravel and dirt. Slope banks, dress shoulders. Remove snow.

Use it on the streets and in the alleys. At the playground and airport. There are three sizes of "Caterpillar" Diesel Motor Graders—all strongly built for steady work, *and easy to keep on the job!* See your nearest "Caterpillar" dealer or write direct to the factory for more information.

CATERPILLAR TRACTOR CO., PEORIA, ILL.

• *The same alley-cutting job and the same machine shown in the other photograph. Notice, however, that the "Caterpillar" Diesel Motor Grader is running in reverse—as it grades. This is one of the time-saving advantages of this machine's fully revolving blade. Instead of turning the machine around in narrow quarters, you turn the blade in a matter of seconds by simply pulling a lever. High-reach, wide-reach blade-positions obtained in the same easy manner.*

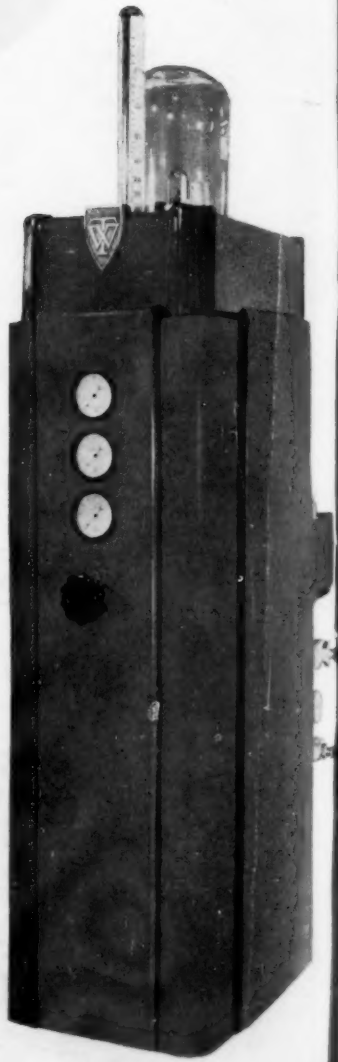
CATERPILLAR *Diesel*

REG. U.S. PAT. OFF.

ENGINES AND ELECTRIC SETS • TRACK-TYPE TRACTORS • ROAD MACHINERY

Crossville gets *DOUBLE* *BENEFITS* with

BREAK-POINT CHLORINATION



After building its new filter plant to furnish a 300,000 gallon per day supply from a nearby lake, Crossville, Tennessee, was faced with the problem of eliminating unpleasant tastes and odors in a high color water.

The complete story of how Crossville solved this problem with BREAK-POINT Chlorination and got an unexpected bonus too—is told in a folder published by W&T. Copies are free—just send for the Crossville story.

Crossville's success with BREAK-POINT Chlorination emphasizes this important fact: laboratory tests may be made in your own plant—without cost or obligation—to show what BREAK-POINT can do for you. Take advantage of this opportunity today by writing your nearest W&T representative, or

WALLACE & TIERNAN CO., INC.

Manufacturers of Chlorine and Ammonia Control Apparatus

Newark, New Jersey Branches in Principal Cities

"The Only Safe Water is a Sterilized Water"

THE AMERICAN CITY

Volumes 56-57

Jan. 1941-Dec. 1942

REEL 14

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